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ROUTE 9 CORRIDOR PLANNING STUDY

LAND USE COMPONENT

SHORT RANGE REPORT

Final Draft

February 1986

METROPOLITAN AREA PLANNING COUNCIL

110 Tremont Street, Boston, Massachusetts 02108

ROUTE 9 CORRIDOR PLANNING STUDY

LAND-USE COMPONENT

SHORT RANGE REPORT

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The manual was made possible by funding from the Federal Highway Administration and the Massachusetts Department of Public Works under contract number MDPW 23892.

Final Draft

February 1986

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EXECUTIVE SUMMARY: PHASE ONE FINAL REPORT, ROUTE 9 CORRIDOR STUDY; LAND USE ELEMENTS ...

The Route 9 Corridor Study is being conducted by the Metropolitan Area Planning Council, the Central Massachusetts Regional Planning Agency and the Central Transportation Planning Staff, under the aegis of the Executive Office of Transportation and Construction and the Massachusetts Department of Public Works. This document represents the MAPC portions of the project, covering land use and growth management topics.

Purpose of Total Route 9 Project

The objectives of the study are as follow:

- ... to understand the dimensions and causes of the traffic problems on Route 9;
- ... to identify the various levels of problems on Route 9;
- ... to understand the relationship of land use and development to Route 9 traffic;
- ... to investigate a full range of possible traffic improvements;
- ... to investigate a full range of alternative transportation techniques applicable via public and private policy;
- ... to evaluate growth management techniques as a long-term means of controlling traffic generation;
- ... to propose a policy and action plan for implementation by the Commonwealth and the communities.

Component Parts of Study (MAPC Area Only)

The Route 9 study encompasses four communities, extending from Route 128 westward to Route 495: Wellesley, Natick, Framingham and Southborough. The corridor bounds are defined in Section One, Existing Land Use, in this report.

Description of the Study Area

The Route 9 corridor (narrowly defined for the detailed purposes of this study) is a unit of four square miles containing a remarkable mix of retail and service uses, office buildings, industrial plants, hotels, open space and water bodies, and residences of every description. Building floor area is approaching 10 million square feet, with an assessed valuation well in excess of $550 million. (Actual market value however may have already exceeded the $1 billion mark.) There are approximately 850 separate lots within the corridor, and over 640 curb cuts in a (two-sided) running frontage of 35 miles. There also exist nearly 40,000 parking spaces.

Development Patterns

The four square miles of the narrowly defined Route 9 corridor contained almost sixty instances of new construction during approximately the past five years, through 1985. This construction had a composite value of over $62 million. There were also 76 instances of building additions with a value of $3.13 million; much of this was small in scale. Nevertheless, there clearly has been significant building within this concentrated area. There has also been much more construction within the corridor or area of

secondary influence, which was not specifically addressed in this report.

Build-Out Analysis

A "build-out" analysis demonstrates dramatically that under present zoning within the corridor, the floor area of buildings could increase several times over, including major expansions on existing developed parcels. Overall results were as follow, by town:

In Wellesley, only 36% of maximum possible construction under existing zoning has been built, thus potentially allowing nearly one million more square feet. In Natick, 53% of maximum has been built, thus permitting another potential 5.78 million square feet. In Framingham, the figures are 45% built and almost 5,732,600 square feet more possible, while in still-developing Southborough, the numbers are 20% built and 7.18 million more square feet possible. Thus, without any zoning change, in the narrow corridor contiguous to Route 9, more than 15,174,000 square feet of floor area can be added, not counting the possible one family homes.

If additional land is zoned for industry or business, or if greater intensity of use is permitted on the land so zoned now, through zoning amendments or variances, the effect would be even greater.

If even a portion of the maximum potential growth is constructed under existing zoning, the implications for traffic generation would be overwhelming for Route 9.

Land Use and Traffic Generation

Mathematical formulas have been developed by the Institute of Transportation Engineers to estimate theoretical traffic generation figures based on different categories of land use.

To calculate potential vehicle trips per day (vtpd) attributable to future development along Route 9 in the four towns, a computer program was designed to use the ITE formulas and the building square footage totals obtained from the list of proposed and under construction new projects in addition to the build-out model projections. These individual results were then combined to get totals of each town and for the four town area.

According to the results obtained from using the ITE formulas, future land uses in the four town area may generate over 256,000 vtpd. Not surprisingly, Framingham is likely to contribute the greatest number of trips overall; and Wellesley, the least. Current projects (under construction or proposed) may account for over 63,000 vtpd. The remaining construction assumed under the build-out model could add another 193,000.

This total clearly demonstrates the dramatic impact increased intensity of land use (which is allowed under current zoning) may have on traffic generation.

Property Values

Data on assessments and property sales were analyzed to provide some indicator of the cost of potential land takings for future road widening and to determine the extent to which assessments are keeping pace with property values.

Based on a sample of 22 sales, the cost of land in the Route 9 Corridor ranges from $2.55 per square foot to $180.23 per square foot. Unimproved land costs range from $2.55 to $11.91 per square foot. These figures were used to calculate the land taking costs for widening the segment of Route 9 from Speen Street to Route 126. The approximate cost of land would be $4,973,571.

It was also found that the requirement of 100% assessment does not appear to have been achieved, with assessed values being on the average 57.7% of the sale price.

Environmental Assets and Obstacles

Heavily urbanized as it is, Route 9 still offers the highway travelers a variety of pleasant views - both natural and man-made.

Lakes, reservoirs and woodlands abut the roadside at numerous locations along the four town stretch. Tastefully landscaped commercial buildings, a 100 year range of residential architecture, stone walls and fences, and several historic public buildings are all interspersed along the road.

As one heads west from Route 128 one passes the suburban homes of Wellesley, the commercial strips of Framingham and Natick, coming finally to the still rural countryside of Southborough.

Much of what is here deserves to be maintained. Any plans for improving traffic flow along the corridor must also incorporate adequate provisions for safeguarding the positive aspects of the visual environment.

Growth Management Techniques

The idea of reducing or stabilizing future traffic generation on a highway by controlling the level of abutting or nearby development is a new one in traffic and transportation planning. It is therefore still approached with caution by those involved in planning and remedial actions of Route 9 and all other congested highway corridors. Nevertheless, there are locations along Route 9 where the situation is already extreme enough to warrant consideration of such measures. Among the techniques discussed in this report are the following:

- - - Traffic or Transportation Impact Fees
- - - Limited De-Intensification of Zoning
- - - Development Scheduling
- - - Transfer of Development Rights
- - - Parking Area Increases
- - - Developments of Regional Impact
- - - Regional Traffic Mitigation
- - - Site Plan Review

Land Use Maps

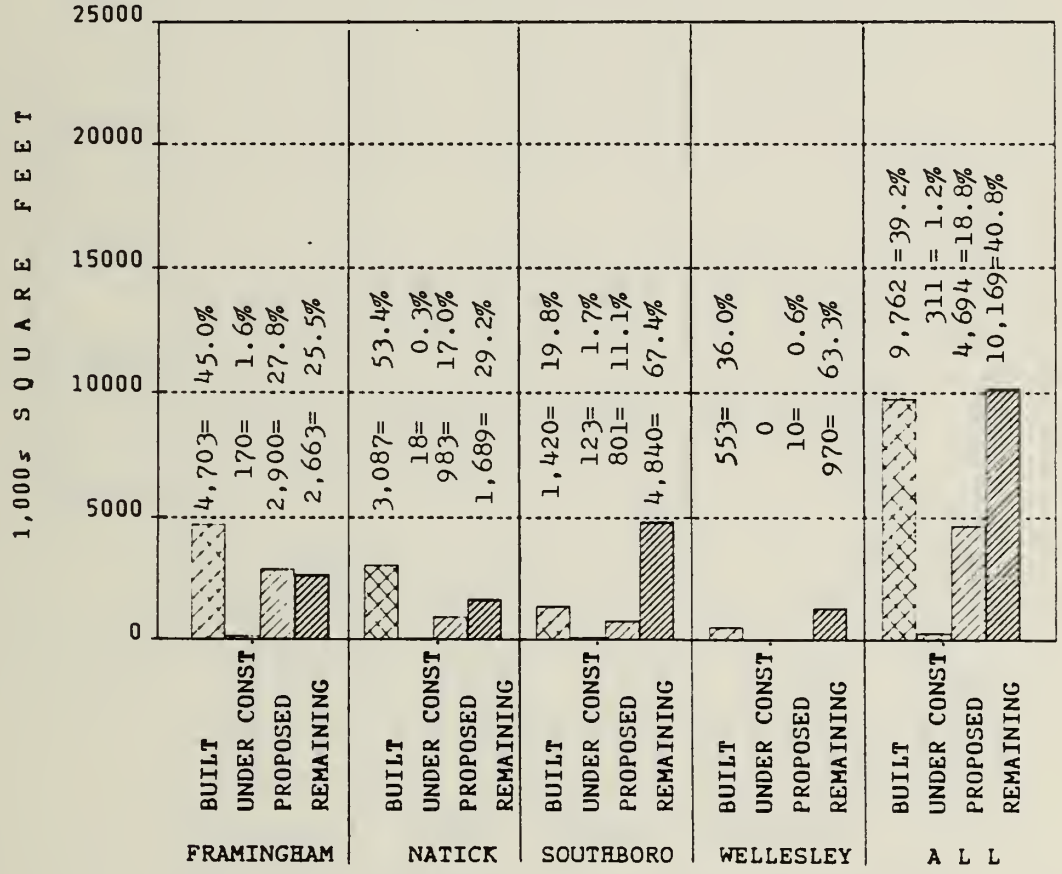
Appendix A contains a set of working maps showing the Route 9 Corridor including the location of buildings immediately adjacent to the highway. These maps are based on each town's assessor's maps, adjusted to a scale of 1"=200'+/-.

Buildings that appeared on the 1985 Massachusetts DPW aerial photographs, but were not on the town maps, were added to provide the reader with a more accurate picture of current land use along the highway.

Survey Data

Appendix B contains the major items of information collected during the course of the study.

EXISTING AND FUTURE INDUSTRIAL AND COMMERCIAL CONSTRUCTION VS. BUILD-OUT



NOTE: ALL PERCENTAGES ARE OF THE POSSIBLE MAXIMUM BUILD-OUT OF COMMERCIAL AND INDUSTRIAL ZONES (FLOOR AREAS OF EXISTING AND FUTURE BUILDINGS)

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I. EXISTING LAND USE

For purposes of the land use portions of this study, the Route 9 corridor was defined as the lots with frontage on the highway. There were a few instances in which a back lot without Route 9 frontage was counted, but only where it was an integral part of a development.

It was necessary to limit the dimensions of the study area due to the immense demands of data collection and analysis carried out in great detail. It would not have been possible to study a much wider secondary area in such detail. Use of a primary frontage corridor is still perfectly valid, however, for the purposes of establishing baseline and projected future conditions.

The overriding purpose of this existing land use section is to describe, primarily with statistics, the mix of uses and activities which have evolved to the current time in the Route 9 Corridor, and which have played the central role in generating the existing traffic difficulties.

One important final note. In all of the land use tables in this section where the phrase "Building Size" is used, the definitions are as follow:
When square footage figures are given, they connote gross floor area. When building size is expressed in acres, it denotes the floor area converted to acreage, in order to provide a direct basis of comparison to the lot size figures.

A. Overview of the Route 9 Corridor

The Route 9 Corridor between Routes 128 and 495 is 17.5 miles long and comprises a total area of 2,468 acres (3.86 square miles), with a total assessed value of land and buildings of $551,661,305. The total two-sided frontage on Route 9 is 163,909 feet, with 644 curb cuts and 39,401 parking spaces. With interchanges and intersections subtracted, the total frontage of lots is reduced by about 10,000 linear feet.

The mix of land uses within the corridor is not uniform. Wellesley is characterized by residential development, Natick and Framingham have traditionally been retail oriented (although this is changing), and Southborough, which is just beginning to grow, is primarily experiencing office development.

The total acreage of parcels fronting on Route 9 is highest in Southborough and decreases as one moves east to Wellesley. Wellesley has the greatest number of individual parcels, which is a reflection of the smaller lot sizes of the residential development common in Wellesley. The ends of the Route 9 corridor are less commercially developed than the middle two towns.

The total assessed value of land and buildings is also highest in Framingham and Natick (above $100 million) and lower in Southborough and Wellesley. The total assessed value in Framingham is more than double the total in Natick. In theory, all towns now assess at 100% of market value, although in practice the results and frequency of updating seem to vary considerably.

SUMMARY OF EXISTING LAND USE

Parcels and Assessed Value

Figure 1-A

	Framingham	Natick	Southborough	Wellesley	Total
Number of Parcels	278	159	104	307	848
Land Area - Square Feet	25,010,661	23,943,872	42,494,253	16,086,054	107,534,840
- Acres	574	549.6	975.5	369.2	2,468
Building Area					
Square Feet	4,862,939	2,733,883	1,374,790	718,017	9,689,629
Acres	111.6	62.7	31.5	16.5	222.3
Assessed Value of Buildings	$205,677,990	$ 87,615,967	$35,330,400	$62,606,600	$391,230,957
Total Assessed Value	$282,510,180	$118,932,325	$50,625,000	$99,593,800	$551,661,305
Route 9 Frontage - Feet	53,234	32,681	36,726	41,268	163,909
Curb Cuts on Route 9	251	144	88	161	644
Parking Spaces	16,509	16,266	2,902	3,724	39,401

SUMMARY OF LAND USE ACREAGE
BY USE AND ZONING

Percentage of Acres

Use:	Framingham	Natick	Southborough	Wellesley
Industrial	0.1	0.4	13.3	0.0
Residential	11.0	2.6	9.3	31.5
Office	17.3	13.0	17.0	5.5
Retail/Service	41.5	25.7	3.8	6.0
Institutional	3.2	31.4	31.4	54.1
Recreational	0.0	19.6	0.0	0
Vacant	26.9	7.3	25.2	2.9
Zoning:				
Residential	26.9	51.2	2.5	45.7
Business	66.1	43.4	34.2	13.8
Light Industrial/Office	3.6	4.0	44.6	1.7
Industrial	3.4	1.4	8.7	0.0
Other	0.0	0.0	10.0	38.8

Figure 1-B

B. Framingham

The Town of Framingham has a two-sided frontage on Route 9 of 10.0 miles or 53,234 feet. The total area of the 278 lots fronting on Route 9 is 574 acres, with a total assessed value of land and buildings of $282,510,130. Approximately 26.9% of the land area is vacant.

The major land uses within Framingham's Route 9 Corridor are retailing, office and residential. Approximately 41.5% of the land area is in retail, with nearly 18% in office use and 11% in residential. The major retail development is Shopper's World, one of the oldest shopping centers in the country. Over 25% of the land area is in vacant and institutional uses, such as the State Police Academy and Framingham State College, which occupy an additional 18 acres.

The majority of the land is zoned for business (66%). The other major zoning category is residential. (The amount of land zoned for residential use is larger than it may appear because all the land surrounding the pond and reservoirs are in this category.)

C. Natick

The Town of Natick has a total of 159 parcels with a two-sided frontage on Route 9 of 32,681 feet. The total area of these parcels is 549 acres. The total assessed value of land and buildings is $118,932,325. (See Figure 1-A.) Approximately 7.3% of the land area is vacant.

The predominant commercial land uses along Route 9 are retail/service (25%) and offices (13% of land area). Approximately 50% of all land is in institutional or recreational use, such as Lake Cochituate. The major retail development is the Natick Mall, a 25 acre complex with a total assessed value of $21 million. The major office use is Prime Computer. There is a significant amount of land used for institutional uses, primarily the MDC Reservoir and the Natick Town Forest. Residential development comprises only 2.6% of the total and approximately 7.3% of all land is vacant. (Figure 1-D)

Although slightly more than half of all land fronting on Route 9 in Natick is zoned for residential use, only 2.6% of total lot area has been residentially developed. The difference between the percentage of land area zoned for business (43.4%) and used for business (24.7%) is also significant. The only zoning category where the percentage of land zoned for that use is less than the percentage being used is the light industrial/office zone.

D. Southborough

There are only 104 parcels in Southborough fronting on Route 9, but these parcels have a combined acreage of 975 acres and a frontage of 36,726 feet. The assessed value of land and buildings is $50,625,000. Approximately 25% of the land area is vacant.

Institutional and vacant land accounts for 57.6% of the total area. The major institutional use is the MDC Reservoir which occupies 245 acres. This portion of Route 9 is just beginning to be developed, primarily with office complexes, such as Data General and NYNEX. There is very little retail development, some residential (9.3% of land area), but industrial uses account for 13.3% of the developed acreage.

The majority of land along Route 9 is zoned either for light industrial/office use or business.

E. Wellesley

The Town of Wellesley has a total of 369 acres of land fronting on Route 9. This acreage is in 307 parcels with a combined frontage of 41,268 feet. The total assessed value of buildings and land is $62,606,600. (Figure 1-A) Approximately 3% of the land area is vacant.

Over half of the land along Route 9 is in institutional uses; primarily the Massachusetts Bay Community College, the Department of Public Works headquarters and open land devoted to watershed protection. The other major land use is residential (31.5% of total land area). Office and retail/service uses occupy another 11.5% of the land area. There are no industrial uses along this section of Route 9.

The zoning allows for additional residential and commercial development. However, there is currently more land devoted to office uses than zoning would indicate. (Figure 1-F)

Land Use by Existing Use and Zoning

Town of Framingham

Figure 1-C

Existing Use by ITE Code*	Land Area Square Feet	Land Area Acres	% of Total Acreage	Building Floor Area Square Feet	Building Floor Area Acres	% of Total Bldg. Floor Area
Industrial	46,022	1.1	0.1	2,050	.04	0.1
Residential	2,755,723	63.2	11.0	2,351,178	53.9	48.3
Office	4,305,572	98.8	17.3	376,682	8.64	7.7
Retail/Service	10,395,742	238.7	41.5	1,933,357	44.40	39.7
Institutional	791,765	18.2	3.2	199,672	4.58	4.2
Vacant	6,715,837	154.2	26.9	0	0.00	0.0
Recreational	0	0.0	0.0	0	0.00	0.0
Total	25,010,661	574.2	100.0	4,862,939	111.56	100.0
Zoning						
Residential	6,730,197	154.5	26.9			
Business	16,531,805	379.5	66.1			
Light Industrial/Office	905,338	20.7	3.6			
Industrial	843,321	19.4	3.4			
Other	0	0.0	0			
Total	25,010,661	574.1	100.0			

*Institute of Transportation Engineers Land Use Codes

Land Use by Existing Use and Zoning
Town of Natick

Figure 1-D

Existing Use by ITE Code*	Land Area Square Feet	Land Area Acres	% of Total Acreage	Building Floor Areas Square Feet	Building Floor Areas Acres	% of Total Bldg. Floor Area
Industrial	106,626	2.4	0.4	34,885	0.8	1.2
Residential	601,315	13.8	2.6	338,405	7.7	11.6
Office	3,124,225	71.7	13.0	895,476	20.5	31.1
Retail/Service	6,173,370	141.7	25.7	1,413,999	32.5	49.2
Institutional	7,503,296	172.2	31.4	1,534	3.5	5.3
Vacant	1,757,649	40.3	7.3	0	0.0	0.0
Recreational	4,677,391	107.3	19.6	49,584	1.1	1.6
Total	23,943,872	549.4	100.0	2,733,883	66.1	100.0
Zoning						
Residential	12,234,090	280.8	51.2			
Business	10,387,625	238.4	43.4			
Light Industrial/Office	973,143	22.3	4.0			
Industrial	349,014	8.0	1.4			
Other	0	0.0	0.0			
Total	23,943,872	549.5	100.0			

*Institute of Transportation Engineers Land Use Codes

Land Use by Existing Use and Zoning
Town of Southborough

Figure 1-E

Existing Use by ITE Code*	Land Area Square Feet	Land Area Acres	% of Total Acreage	Building Floor Areas Square Feet	Building Floor Areas Acres	% of Total Bldg. Floor Area
Industrial	5,652,343	129.7	13.3	789,439	18.12	57.5
Residential	3,982,245	91.4	9.3	30,000	0.68	2.2
Office	7,229,651	165.9	17.0	447,355	10.26	32.5
Retail/Service	1,654,402	37.9	3.8	87,048	1.99	6.3
Institutional	13,279,320	304.8	31.4	20,948	0.48	1.5
Vacant	10,696,292	245.5	25.2	0	0.0	0.0
Recreational	0	0	0	0	0.0	0.0
Total	42,494,253	975.2	100.0	1,374,790	31.53	100.0
Zoning						
Residential	1,050,226	24.1	2.5			
Business	14,537,024	333.7	34.2			
Light Industrial/Office	18,941,192	434.8	44.6			
Industrial	3,708,695	85.1	8.7			
Other	4,257,116	97.7	10.0			
Total	42,494,253	975.4	100.0			

*Institute of Transportation Engineers Land Use Codes

Land Use by Existing Use and Zoning

Town of Wellesley

Figure 1-F

Existing Use by ITE Code*	Land Area Square Feet	Land Area Acres	% of Total Acreage	Building Floor Areas Square Feet	Building Floor Areas Acres	% of Total Bldg. Floor Area
Industrial	0	0	0	0	0	0
Residential	5,000,283	114.7	31.5	51,756	1.18	7.3
Office	867,509	19.9	5.5	272,092	6.24	37.9
Retail/Service	959,824	22.0	6.0	236,811	5.43	33.0
Institutional	8,586,114	197.1	54.1	157,358	3.6	21.8
Vacant	461,058	10.6	2.9	0	0	0
Recreational	0	0	0	0	0	0
Total	15,874,788	364.3	100.0	718,017	16.45	100.0
Zoning						
Residential	7,338,846	168.40	45.7			
Business	2,219,432	50.95	13.8			
Light Industrial/Office	276,918	6.30	1.7			
Industrial	0	0.0	0.0			
Other	6,250,858	143.4	38.8			
Total	16,086,054	369.05	100.0			

*Institute of Transportation Engineers Land Use Codes

A. Overview

In order to gain some understanding of Route 9 growth in recent years, the best overall data source, at least to convey gross quantities of activity, are building permits. A decision was made to study permits from 1981 to 1985, and not to gather them from further back. This decision was based on the following four factors: 1) some limitation had to be placed on the large task of data collection; 2) the most recent years are of greatest interest; commercial facilities have been proliferating along Route 9 for forty years, so it is the most recent patterns and trends that will serve the purposes of a corridor study; 3) land use maps are available showing land use changes from 1951 and 1971 through 1980; and 4) many communities place their records from more than five years ago in archives.

The building permits issued in each of the four towns were reviewed for the five year period 1981-1985. The information was collected according to the type of permit: new construction, additions, renovations, demolitions, as well as broken down by Route 9 addresses. The total dollar value of the permits was also obtained, except for demolitions.

The middle portion of the Route 9 Corridor (Framingham and Natick) experienced a significantly higher level of activity than the eastern and western ends. This is illustrated in Figure 2-A, The Geographic Distribution of Total Value of Buildings Permitted. Over the five year period, building construction (as indicated by building permits issued) reached a peak value in 1983 with a considerable slowdown by 1985. (Figure 2-B)

B. New Construction Permits

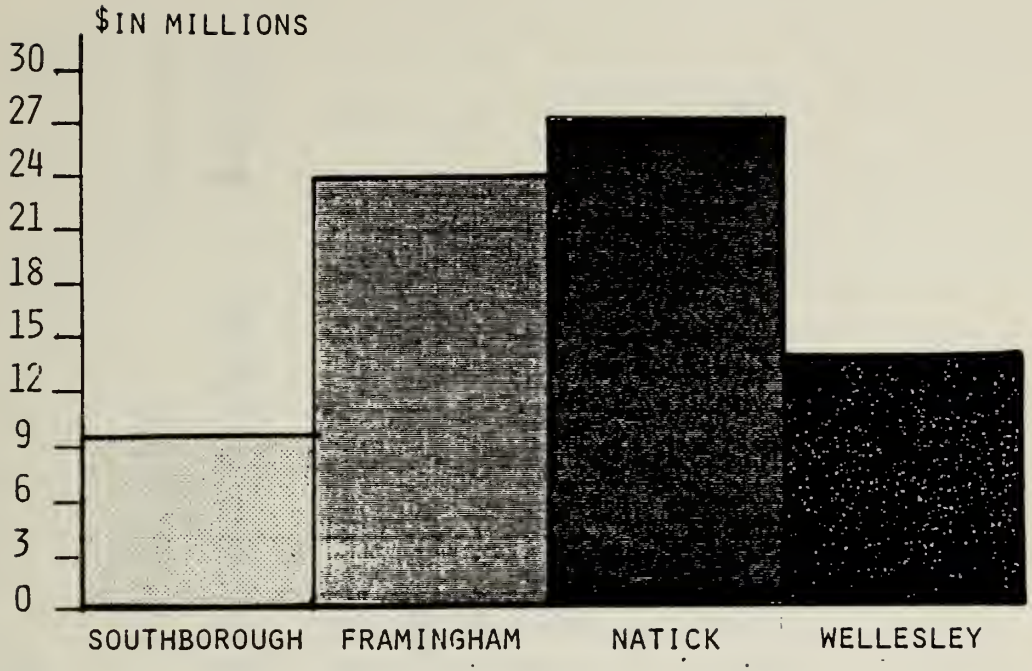
On the Route 9 Corridor Framingham had the greatest number of permits for all types of new construction over the five year period, but the total value of new construction in Natick was higher.

The total value of new construction in the four towns during the five year period was $62,069,038. (See Figure 2-C.) Natick's share of this total was 36.8% followed by Framingham with 27.8%, Wellesley with 21.2%, and Southborough with 14.2%.

The volume of new construction permits varied by year and by town considerably. There were several years (1981, 1982, 1983) during which no new construction permits were issued in a given town. The greatest number of new construction permits was issued in Framingham in 1984 (14 permits) while the highest value of new construction permits ($14,773,067) was in Natick in 1983. Overall, the peak year for the total number of new construction permits was 1984, although the highest value was in 1983. (Figure 2-D)

FIGURE 2-A

THE GEOGRAPHIC DISTRIBUTION OF
TOTAL VALUE OF BUILDINGS PERMITTED



*THE TOTAL OF NEW CONSTRUCTION, ADDITIONS AND RENOVATIONS FOR 1981-1985

FIGURE 2-B

VALUE OF BUILDINGS PERMITTED BY YEAR

Building Permits and Value by Town

1981-1985

	New Construction		Additions		Renovations		Demolitions
	# Permits	Value	# Permits	Value	# Permits	Value	# Permits
Framingham	27	$17,267,220	33	$2,027,600	104	$4,764,250	11
Natick	11	22,836,377	21	633,860	130	7,478,378	9
Southborough	10	8,788,400	12	68,700	20	1,105,750	4
Wellesley	10	13,177,041	10	392,250	28	896,730	1
Total	58	$62,069,038	76	$3,122,410	282	$14,245,108	25

Figure 2-C

Building Permits and Value By Year

	New Construction		Additions		Renovations		Demolition
	Permits	Value	Permits	Value	Permits	Value	Permits
1981	8	$14,710,900	10	$ 461,670	56	$ 1,280,221	3
1982	6	8,505,800	15	285,790	37	2,620,067	5
1983	11	17,037,067	23	1,644,050	67	4,671,372	7
1984	19	16,317,735	17	419,300	88	4,157,148	9
1985	14	5,497,536	11	311,600	34	1,516,300	1
Total 1981-85	58	$62,069,038	76	$3,122,410	282	$14,245,108	25

Figure 2-D

C. Permits for Additions

Although new construction is the most obvious sign of development in a given area, the number of permits issued for additions to existing buildings exceeded the number of permits for new construction. Most of this activity is for small scale construction. In some cases, however, the number of additions can give some indication of the potential for more intensive build-out on lots which are already developed for commercial use.

Framingham had the most permits issued for additions as well as the highest value. In Framingham, the total value of additions was $2,027,600, while in Southborough the value of additions was only $68,700. The towns with the highest level of new construction (Framingham and Natick) also had the highest number of additions. (Figure 2-C)

D. Permits for Renovations

Renovations will affect traffic generation less than new construction or major commercial additions because they are for interior modifications rather than for the creation of additional floor area. However, renovations are an additional indicator of construction activity in an area and accounted for the greatest number of permits (282) and the second highest value ($14,245,108).

The greatest number and value of renovations occurred in Natick, followed by Framingham, Wellesley and Southborough. The most permits for renovations were issued in 1983 and 1984. (Figure 2-C)

E. Permits for Demolition

Demolition permits can also be used as an indicator of future growth because demolition clears the way for new and potentially more intensive development. The greatest number of demolition permits was in 1984. Framingham and Natick had the highest number of demolition permits. The total number of demolition permits was slightly less than half the number of permits for new construction. (Figure 2-C)

F. Recently Completed Developments

Retail and commercial developments in Natick and Framingham comprised 77% of the 550,306 square feet of developments completed in the Route 9 Corridor by 1985. The remainder of this development was office construction in Framingham and Southborough. (Figure 2-I)

G. Developments Under Construction

Framingham leads the Route 9 Corridor in the number of square feet currently under construction. There are 169,650 square feet of office development under construction in Framingham. There is an additional 122,523 square feet of office development being built in Southborough and a small amount of retail and residential development in Natick and Wellesley respectively. The total under construction is 310,473 square feet. (Figure 2-J)

H. Proposed Developments

Currently there are proposals for 4,693,750 square feet of new development in the four towns. Almost half of this amount consists of mixed office and hotel developments in Framingham. Another 40% (1,825,950 square feet) is office development, primarily in Natick and Southborough. Retail and commercial development accounts for only 780,000 square feet and residential development is negligible (six single-family homes). (Figure 2-K)

Although a development proposal is not equivalent to a building permit, comparing development proposals to new construction permits can give some indication of how the level of proposed developments compares to development activity in previous years. There are currently 17 proposed developments in the Route 9 Corridor, as compared to a high of 19 new construction permits in 1984. The geographic distribution of the proposed developments is similar to that of new construction permits in past years, with the highest number of projects proposed, located in Framingham and Natick.

Building Permits Summary

Town of Framingham

	1981	1982	1983	1984	1985	1981-1985
New Construction						
# of Permits	0	4	5	14	4	27
Value	0	$1,418,000	$ 764,000	$12,719,000	$2,366,220	$17,267,220
Additions						
# of Permits	3	8	9	7	6	33
Value	$ 96,000	$ 131,000	$1,222,000	$ 307,000	$ 271,600	$ 2,027,600
Renovations						
# of Permits	15	7	19	34	29	104
Value	$183,200	$ 117,000	$2,051,000	$1,128,050	$1,285,000	$4,764,250
Demolition						
# of Permits	1	4	3	3	0	11

Figure 2-E

Building Permits Summary

Town of Natick

	1981	1982	1983	1984	1985	1981-1985
New Construction						
# of Permits	4	0	5	1	1	11
Value	$6,930,000	0	$14,773,067	$1,130,394	$2,916	$22,836,377
Additions						
# of Permits	6	5	7	3	0	21
Value	$ 362,670	$ 134,190	$ 88,000	$ 49,000	0	$ 633,860
Renovations						
# of Permits	24	23	38	45	0	130
Value	$ 802,921	$2,433,317	$ 2,154,022	$2,088,118	0	$ 7,478,378
Demolition						
# of Permits	2	0	4	3	0	9

Figure 2-F

Building Permits Summary

Town of Southborough

	1981	1982	1983	1984	1985	1981-1985
New Construction						
# of Permits	2	0	1	3	4	10
Value	$2,000,000	0	$1,500,000	$2,410,000	$2,878,400	$8,788,400
Additions						
# of Permits	0	1	5	4	2	12
Value	0	$ 350	$ 37,350	$ 28,000	$ 3,000	$ 68,700
Renovations						
# of Permits	9	4	2	2	3	20
Value	$ 249,000	$3,750	$ 360,000	$ 290,000	$ 203,000	$1,105,750
Demolition						
# of Permits	0	1	0	2	1	4

Figure 2-G

Building Permits Summary

Town of Wellesley

	1981	1982	1983	1984	1985	1981-1985
New Construction						
# of Permits	2	2	0	1	5	10
Value	$5,780,900	$7,087,800	0	$ 58,341	$250,000	$13,177,041
Additions						
# of Permits	1	1	2	3	3	10
Value	$ 3,000	$ 20,250	$296,700	$ 35,300	$ 37,000	$ 392,250
Renovations						
# of Permits	8	3	8	7	2	28
Value	$ 45,100	$ 66,000	$106,350	$650,980	$ 28,300	$ 896,730
Demolition						
# of Permits	0	0	0	1	0	1

Figure 2-H

METROPOLITAN AREA PLANNING COUNCIL

ROUTE 9 STUDY

ROUTE 9 DEVELOPMENT COMPLETED IN 1985

(NON-RESIDENTIAL)

WELLESLEY	0
NATICK	329,850 sq. ft.
FRAMINGHAM	114,804 sq. ft.
SOUTHBOROUGH	110,652 sq. ft.
TOTAL	550,306 sq. ft.

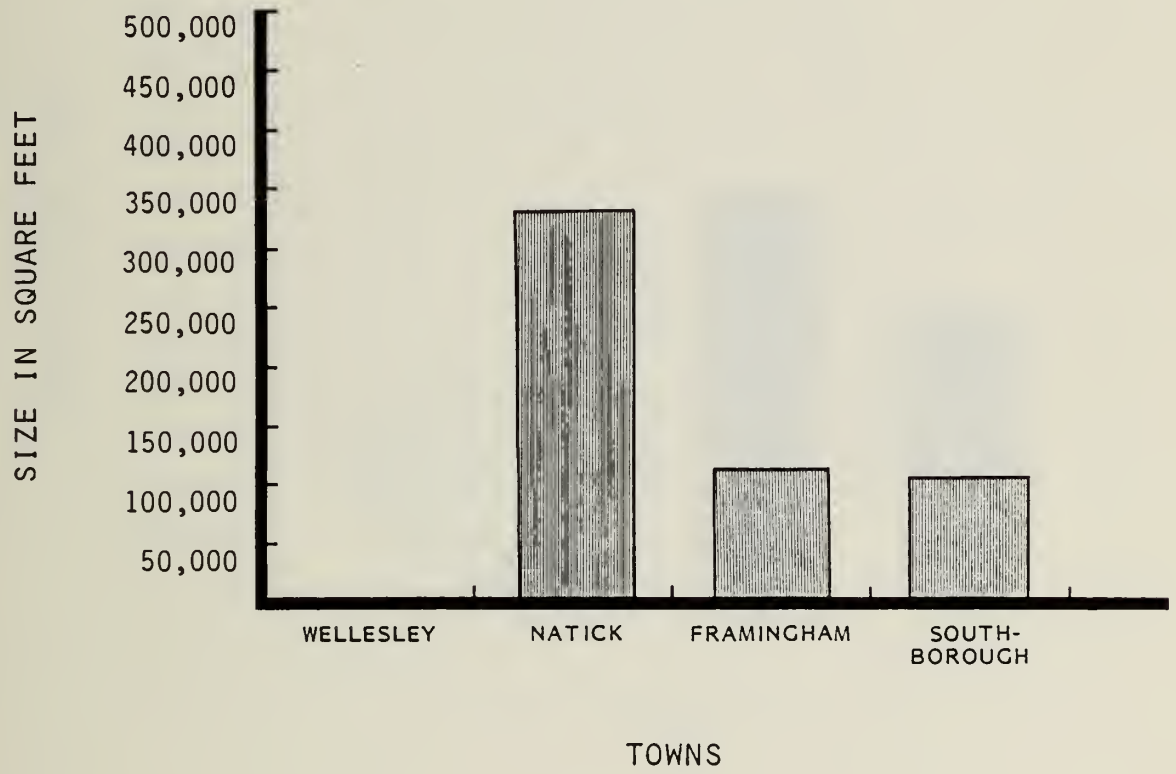


Figure 2-1

METROPOLITAN AREA PLANNING COUNCIL

ROUTE 9 STUDY

ROUTE 9 DEVELOPMENT UNDER CONSTRUCTION - FALL 1985
(NON-RESIDENTIAL)

WELLESLEY	0
NATICK	18,300 sq. ft.
FRAMINGHAM	169,650 sq. ft.
SOUTHBOROUGH	122,523 sq. ft.
TOTAL	310,473 sq. ft.

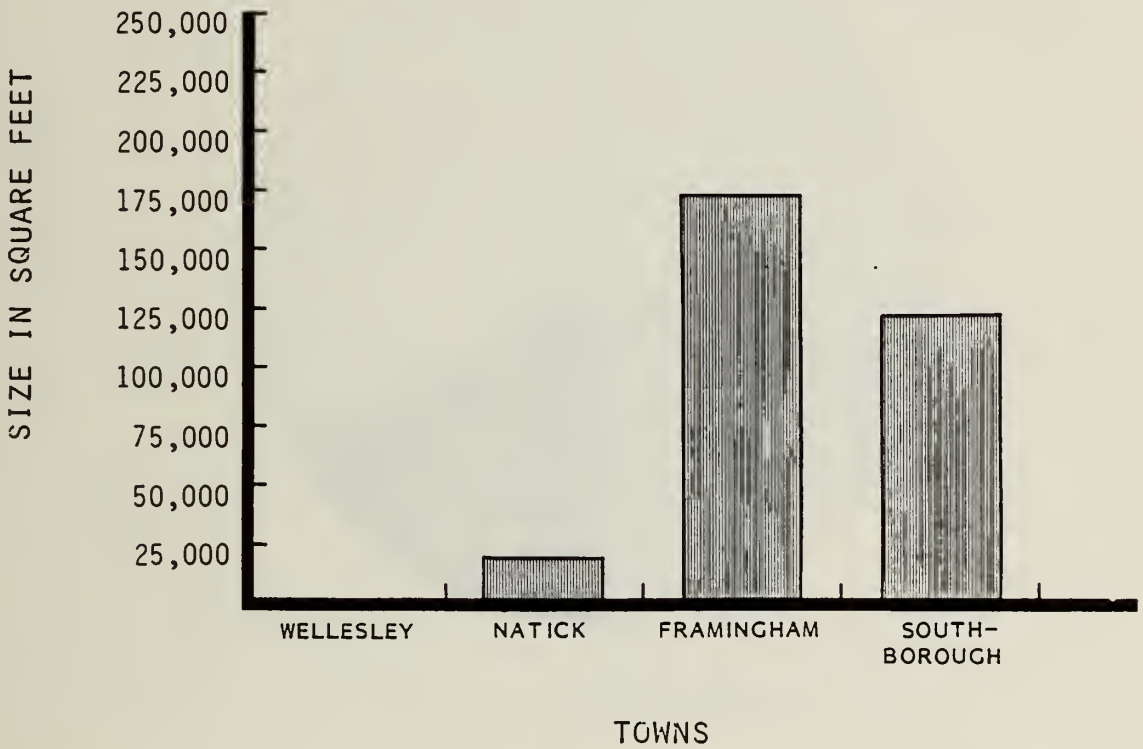


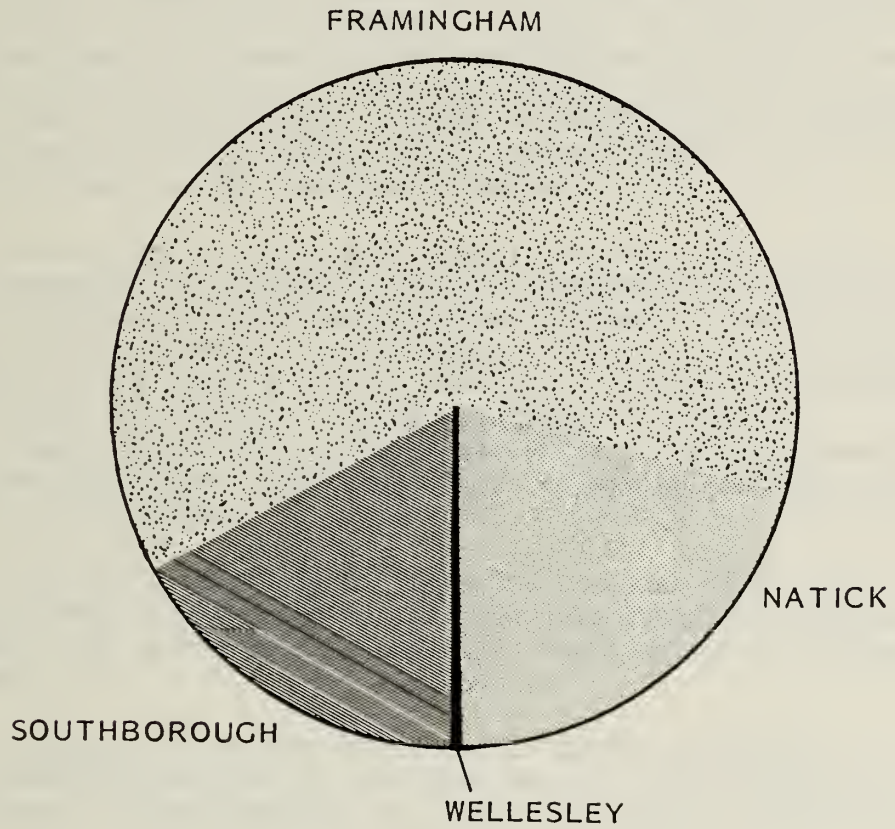
Figure 2-J

METROPOLITAN AREA PLANNING COUNCIL

ROUTE 9 STUDY

ROUTE 9 PROPOSED DEVELOPMENT - FALL 1985* (NON-RESIDENTIAL)

WELLESLEY	10,000 sq. ft.
NATICK	983,000 sq. ft.
FRAMINGHAM	2,899,750 sq. ft.
SOUTHBOROUGH	801,000 sq. ft.
TOTAL	4,693,750 sq. ft.



*Information obtained from ENFs and/or Local Planning Departments.

Figure 2-K

III. BUILD-OUT

Most people assume when there is little remaining vacant land that an area is fully developed, and that there will be little or no further construction, and therefore no additional traffic generation. However, vacant land is not the only indication of development potential along parts of Route 9. Most of the existing zoning allows a great deal of further development, and proposals, such as the expansions of Shopper's World and Natick Mall, indicate that great intensification is now occurring.

A build-out analysis projects theoretically-permitted maximum construction. Even if only a portion is actually built, the figures can be disturbing in terms of traffic congestion and safety, as well as infrastructure overload, public service burdens and environmental impacts. A build-out projection can underscore the need for major remedial actions before the situation worsens further.

Although all four of the study area towns provide for similar zoning uses along Route 9, the percentage of land actually devoted to each type of use varies considerably community by community. So, too, does the intensity of uses within each of the similar zones. In order to understand if individual dimensional differences were primarily responsible for the variation in use densities found along the highway, an examination was made of each town's zoning bylaws. A range of key individual requirements was found in the four zoning bylaws, but it appeared that these variations did not alone account for the land use differences.

To substantiate more definitively the reasons for this observation, a preliminary comparison of existing land uses (documented by field surveys and assessors' records) and the zoning bylaws was made. The results showed a significant difference in allowable building sizes and actual (constructed) building sizes in all of the towns. Many lots were found to be "under-utilized" according to zoning regulations. This was particularly true in older areas. New construction, however, seemed on the whole to be of a larger scale and greater intensity than that which had occurred in past decades.

An examination of the building permit data for the past five years (1981-1985) confirmed the impression that land was being put to more intensive uses. New buildings came closer to approaching the maximum allowable limits.

Because the intensity of land use has direct impacts on traffic conditions, a decision was made to analyze the "build-out" potential in each of the towns to determine what the limits for growth actually are along the highway. The resulting statistics are instructive.

A. Methodology

Sixteen individual computer programs (one for each of the sixteen separate zoning districts analyzed) were designed to determine the maximum build out potential on each lot in each district. Only land in nonresidential or nonconservation districts was analyzed. Dimensional regulations for each zone -- minimum frontage and lot size, setbacks, height restrictions, buffer zone requirements, FARs (floor area ratio), maximum

ground coverage, and parking regulations were fed into the computer. The programs were designed so that they made continual adjustments to satisfy each additional requirement (dimensional, parking, etc.) as proposed building size increased.

Maximum building size was reached when any one of the specific requirements could no longer be satisfied. Depending on the lot configurations, different provisions of the bylaws triggered the maximum limit. To determine the percentage of actual build out, the existing building floor area was divided by the allowable building floor area - on a lot by lot basis. Results were dramatic, in that only one of the four communities has surpassed 50% of its potential growth.

These build-out figures are meant to be used only as approximations of possible growth under existing zoning conditions.

The build-out programs were not designed to provide for every variable that could influence actual future construction. In many ways, these programs may underestimate potential growth. The possibility of rezoning for more intensive uses was not considered, and no provisions were included to allow for the effects of multiple lot combinations, parking structures, the granting of zoning relief through variances, or the subdivision of large parcels. Counterbalancing these 'liberalizing' factors, to some degree, are the potentially limiting forces of environmental regulations and economic market conditions. For example, the office vacancy rate in the Route 9 area is approaching 25%. Thus it is reasonable to expect a slowing down of construction at least temporarily.

The following sections detail the results obtained for each town by the program analysis.

B. Wellesley

Over 75% of the land along Route 9 in Wellesley is zoned for residential, educational or conservation uses. The remaining land is divided into four commercial or office zones. In these four zones a total of 718,017 square feet of building space is presently in existence. In two of these four zones maximum build-out has already occurred; in the remaining two zones build-out is presently at 32% and 42%; the overall construction to date stands at only 36% of potential build-out. An additional 814,368 square feet of construction is allowable in Wellesley.

At this point, very little construction activity has been publicly proposed, so there is reason to assume that growth will occur relatively slowly on Route 9 in Wellesley.

C. Natick

Of the towns studied, Natick, with 53% of its allowable floor space already constructed, is the closest to overall maximum build-out. Although this community has the shortest frontage along Route 9, it has devoted a large share of it to business and office use. Six different commercial/office zones presently support over 3 million square feet of floor space.

Under existing zoning 5,777,328 square feet of buildings are possible. The likelihood that a good percentage of this will be constructed is

relatively high, as approximately 1 million square feet more of construction is already in the regulatory pipeline.

D. Framingham

Framingham, the home of Shopper's World, one of the oldest malls in America, has the largest concentration of retail establishments along the road. The Golden Mile (an area of Route 9 from Speen Street in Natick to the Route 126 overpass in Framingham), has become one of the most valuable stretches of real estate in metropolitan Boston. Assessed valuation has recently exceeded the two hundred million mark. This community has by far the highest percentage of business-zoned land along Route 9. It must be noted that some of the land zoned for business, particularly near the Southborough boundary, is devoted to apartment use.

Present zoning bylaws allow for almost ten and a half million (10,500,000) square feet of building space. Currently about 45% (or 4,702,613 square feet) of that space is in existence. The important statistic to emphasize, however, is the amount of proposed development along Route 9 - over 2,800,000 square feet. This amount would increase building space along Route 9 by nearly 60% over present levels. For those who believe the infrastructure systems are straining to meet present needs, this adds a significant dimension and should alert decision-makers to the extent of possible future demands.

E. Southborough

Southborough, the town with the lowest density of development along Route 9, has by far the most potential for additional construction. Only 20% of the 7,184,118 square feet allowable under existing zoning bylaws has been constructed to date. Most of the Route 9 frontage in the town is assessed as commercial or industrial land, which provides a very real incentive to owners of the small homes along the road to sell to developers.

Traffic on this section of Route 9 is less busy than it is on the eastern sections. However, an additional 5 1/2 million square feet of construction would have a major traffic impact on the Southborough segment.

F. Summary

These figures for build-out along Route 9 show the potential for over 15 million square feet of additional construction. This will undoubtedly come as a shock to many local residents and decision-makers who feel the highway corridor has almost reached its maximum intensity of use.

Although, as has already been pointed out, it is not expected that full development will occur because of the many unquantifiable forces that will shape the future of development, it is suggested that decision-makers take these statistics into account when they plan for their communities. An increase in the intensity of development along this road will bring additional pressures of every kind.

This growth also has many implications for the region as a whole - one of the major ones being that of additional traffic generation. Because of this, it was decided to look in greater detail at this particular issue.

Chapter IV briefly outlines the analysis which was based on projections made by using the ITE (Institute of Transportation Engineers) trip generation codes.

The following pages contain graphs showing build-out percentage by individual zoning districts in each town as well as overall build-out totals for all four towns.

The sixteen zoning districts included in the evaluation are:

Wellesley*
- W-B Business
- W-BA Business A
- W-BL Limited Business
- W-A&P Administrative & Professional

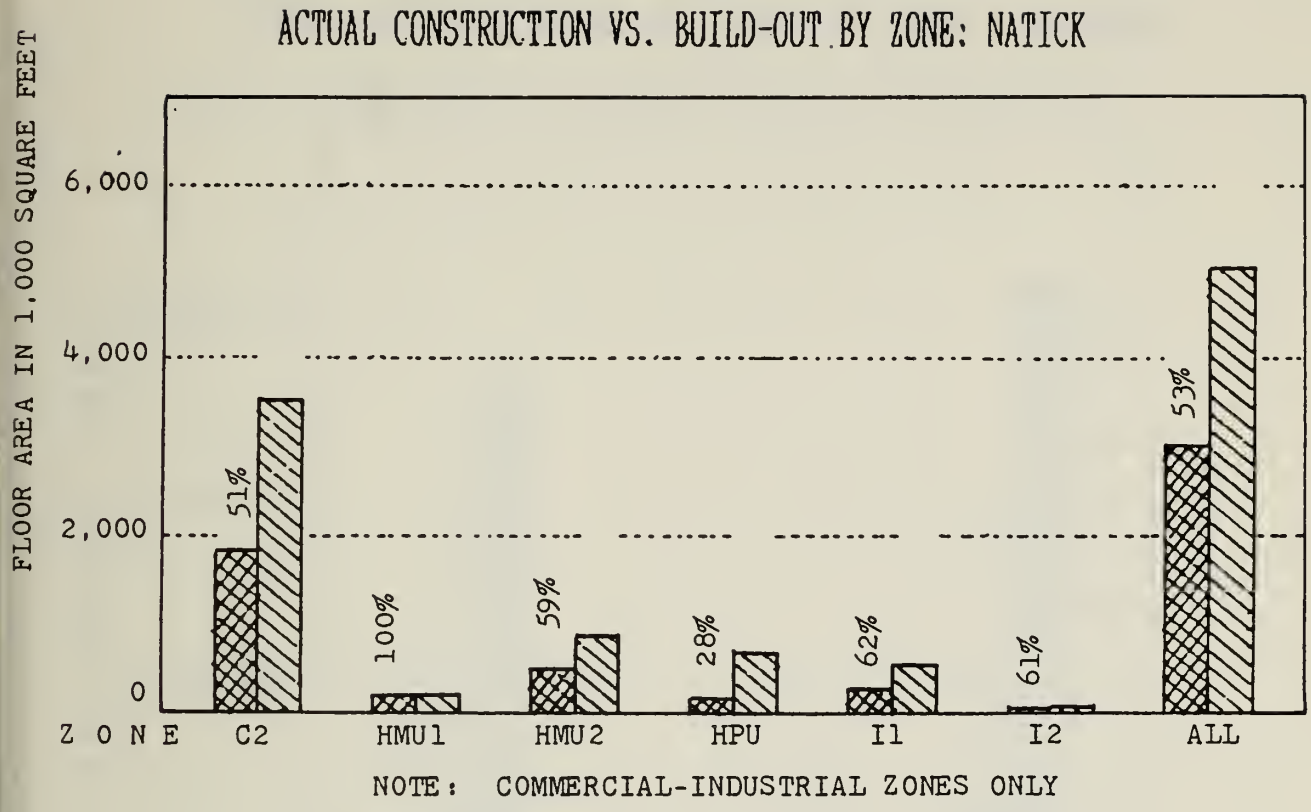
Natick
- N-C2 Commercial Zone
- N-HPU Highway Planned Use
- N-HMU1 Highway Mixed Use 1
- N-HMU2 Highway Mixed Use 2
- N-I1 Industrial 1
- N-I2 Industrial 2

Framingham
- F-B Business
- F-(M-I) Light Industrial
- F-M Industrial

Southborough
- S-B Business
- S-I Industrial
- S-IP Industrial Park

* The prefixes "W", "N", "F", "S", were added to the individual zoning districts to make identification easier for purposes of this study.

Figure 3-A


ACTUAL CONSTRUCTION VS. BUILD-OUT BY ZONE: NATICK
FLOOR AREA IN 1,000 SQUARE FEET
6,000
4,000
2,000
0
51%
100%
59%
28%
62%
61%
53%
Z O N E
C2
HMU1
HMU2
HPU
I1
I2
ALL
NOTE: COMMERCIAL-INDUSTRIAL ZONES ONLY

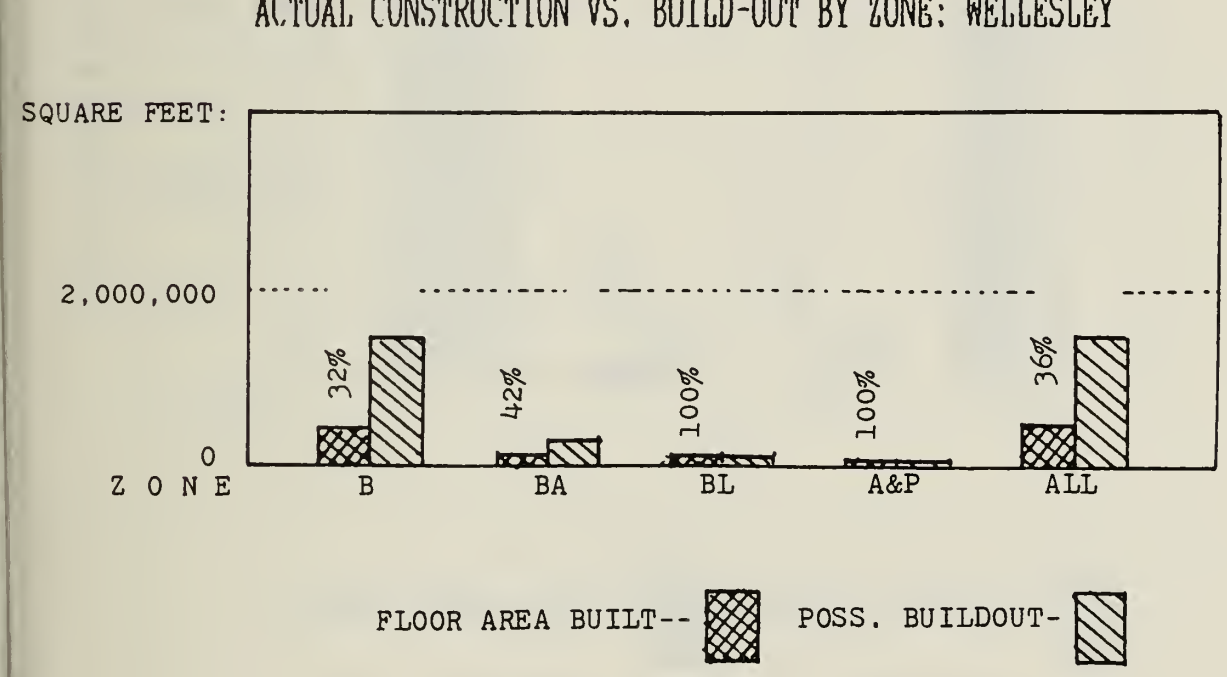
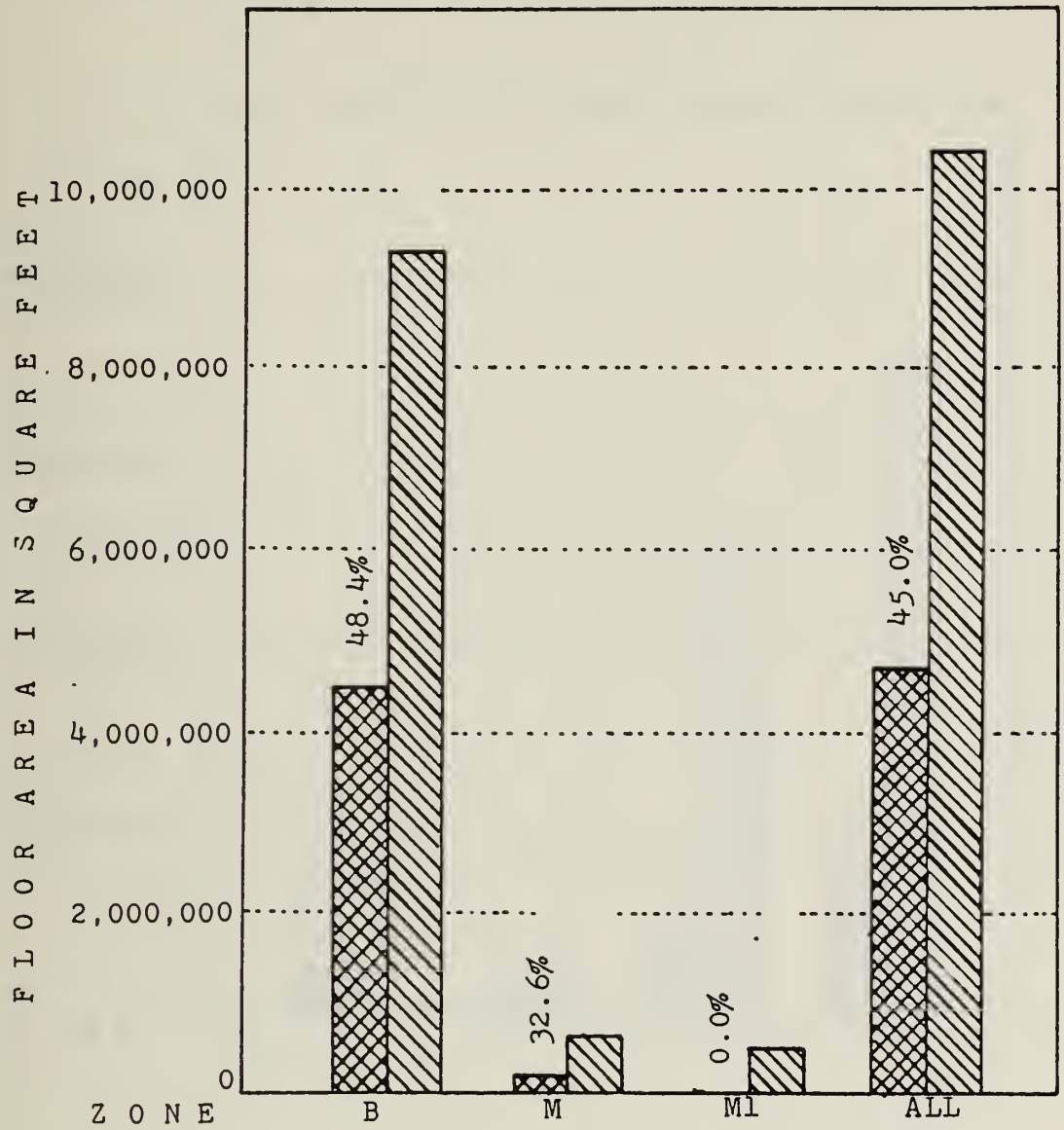

ACTUAL CONSTRUCTION VS. BUILD-OUT BY ZONE: WELLESLEY
SQUARE FEET:
2,000,000
0
32%
42%
100%
100%
36%
Z O N E
B
BA
BL
A&P
ALL
FLOOR AREA BUILT--
POSS. BUILDOUT-

Figure 3-B

ACTUAL CONSTRUCTION VS. BUILD-OUT BY ZONE: FRAMINGHAM

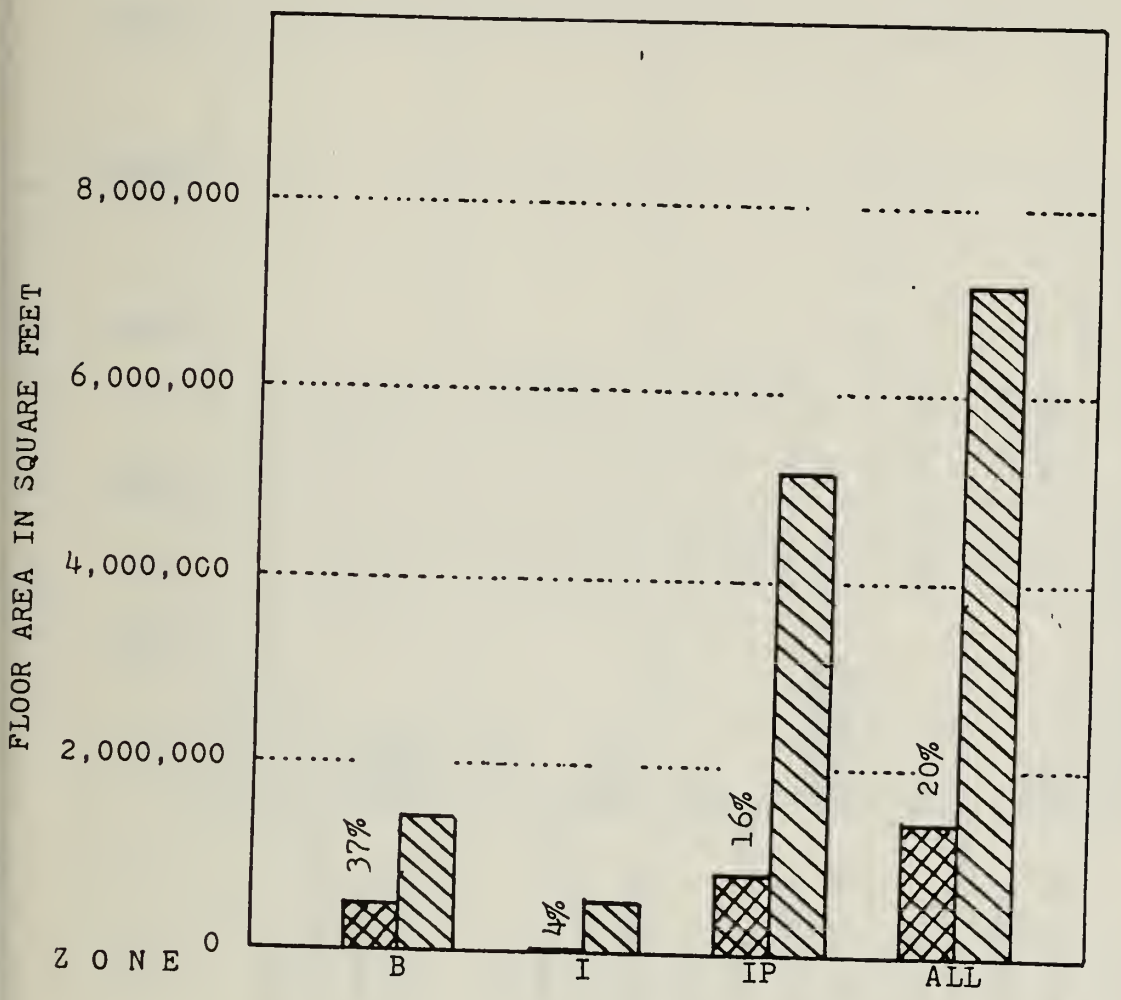


FLOOR AREA BUILT-- POSSIBLE BUILDOUT-

NOTE: COMMERCIAL-INDUSTRIAL ZONES ONLY

Figure 3-C

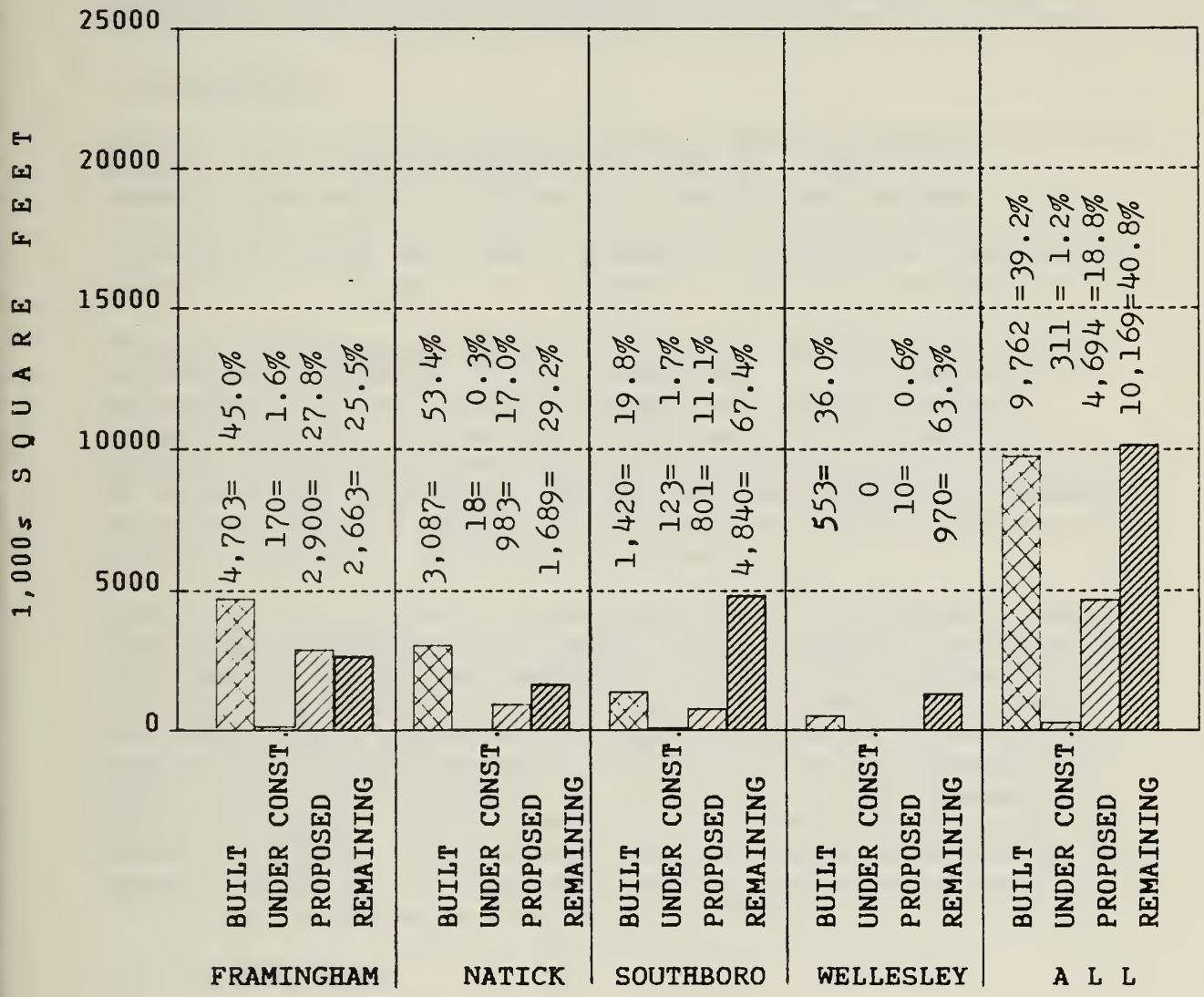
ACTUAL CONSTRUCTION VS. BUILD-OUT BY ZONE: SOUTHBOROUGH



FLOOR AREA BUILT-- POSSIBLE BUILDOUT

NOTE: COMMERCIAL-INDUSTRIAL ZONES ONLY

EXISTING AND FUTURE INDUSTRIAL AND COMMERCIAL CONSTRUCTION VS. BUILD-OUT



NOTE: ALL PERCENTAGES ARE OF THE POSSIBLE MAXIMUM BUILD-OUT OF COMMERCIAL AND INDUSTRIAL ZONES (FLOOR AREAS OF EXISTING AND FUTURE BUILDINGS)

Figure 3-D

IV. LAND USE AND TRAFFIC GENERATION

The use of land along a road has a direct impact on the volume and type of traffic on that road. The range of traffic generated by different land uses varies greatly. In order to evaluate the effect an existing or proposed development has, or will have, on its immediate area, it is necessary to know what the vehicle trips per day generated by that land use are, or what they are likely to be.

The analyses in this section should not be construed to be sophisticated traffic engineering exercises that can be employed for technical applications. These analyses, by contrast, are approximations, using a limited and general methodology to project theoretical future traffic generation using broad future land use assumptions under build-out scenarios. That is their sole purpose.

A. Source Used

The Institute of Transportation Engineers developed models to estimate traffic for nine major categories of land use. They are: Industrial/Agricultural, Residential, Lodging, Recreational, Institutional, Medical, Office, Retail and Service. Within each of these major categories, there are numerous subcategories that provide a greater level of detail for planners to base their estimates on.

The ITE Trip Generation Manual is a standard document used to make evaluations of potential traffic generation. It is important to understand that these figures represent only general estimates. Actual numbers can, and do, vary. The codes provide theoretical guidelines based on national averages that local planners can modify to reflect local conditions. The following estimates are, therefore, not the results of a detailed traffic engineering study, but general planning projections based on the ITE model.

Along with the estimates of average daily trips, the manual discusses the timing distribution of different types of traffic. Some types of land use, such as offices, generate the major portion of their daily trips during a.m. and p.m. peak hours. Other types, such as retail use, tend to have a great deal of seasonal variation in their traffic generation. For some categories of land use, the trip generation is based on the size of the facility - such as the square footage of an office building or retail store. (The rates for these two types are widely different.) In other cases, the rates were established by the number of units as in an apartment complex, the number of rooms as in a hotel, or the number of students at a school.

B. Study Methodology

For the purposes of this study, a very general approach was used to produce possible traffic generation totals based on future land uses. This section is divided into two parts: the first covers potential vehicle trip generation for buildings presently in the planning regulatory pipeline or actually under construction at the time

of Route 9 data collection; the second covers the remaining amount of development allowable under existing zoning based on the build-out model presented in Chapter III.

C. Trip Generation for Currently Proposed Development

To obtain future vehicle trips per day (vtpd), each development under construction or officially proposed was assigned the appropriate ITE code number. The size (square footage, number of rooms, etc.) of the development was then multiplied by the formula given for the code to estimate average daily trips generated.

The results were as follows:

Town	Potential Future VTPDs (Proposed Construction)
Wellesley	177
Natick	15,427
Framingham	36,071
Southborough	11,689
Total	63,367

D. Trip Generation for Build-Out Model

To determine the remaining vtpds based on build-out potential, the square footage of those buildings officially proposed or under construction was then subtracted from the build-out totals given in Chapter III.

The resulting square footage was then assumed to contain relatively the same mix of uses as those that are presently proposed or under construction. This meant that 100% of Wellesley's build-out was assigned to office use; 73% of Natick's to office and 27% to retail use; 18% of Framingham's was considered retail and 82% office use; Southborough was assigned 100% to office use. There is no way to predict at this time what may be the actual uses, since each zoning category allows a range of different uses with different traffic generation rates.

Using these figures and multiplying by the appropriate ITE formula resulted in the following additional potential vehicle trips per day:

Town	Potential Future VTPDs (Build-Out)
Wellesley	13,871
Natick	47,415
Framingham	63,357
Southborough	68,783
Total	193,426

The combined totals of possible trips generated by future land uses along Route 9 (both proposed and build-out) totaled 256,790 .

E. Summary

It should be emphasized that trip generation numbers do not translate into traffic volumes on the road. The direction and distance of trips vary and this is not taken into account in producing the vtpds. Also, through traffic is not accounted for. Further, not all trips per day generated by land uses adjacent to Route 9 exit to Route 9. Many vehicles will exit onto other roads, such as Route 30, Speen Street, and the numerous other side streets in the area, and may or may not then use Route 9.

Trip generation figures are theoretical constructs that may be used by transportation planners and local decision-makers as guidelines to help them to assess possible future needs.

The large additional number of vtpd attributable to proposed construction and the build-out model dramatically point out the impact of land uses on traffic generation. Future traffic conditions depend on understanding the interrelatedness of these factors.

V. PROPERTY VALUES

A. Data Used

Data on the assessed value of land and buildings as well as recent sales were collected for two reasons: (1) to provide some cost indicators relating to potential land takings for possible future widenings along Route 9 and (2), to determine the extent to which assessments are keeping pace with property values in the Route 9 Corridor.

The data on assessed values were taken directly from each town's tax records and were obtained in July of 1985. The data on actual sales were "comparables" obtained from recent property appraisals in the corridor and sales records kept on file in the Wellesley and Framingham Assessors' offices.

The interpretation of these data must be approached carefully. The data are provided in order to take a general look at property values and the potential cost of future widening of Route 9. There are many factors which can influence the interpretation of these data, including the small sample size, the greater availability and use of data from Framingham, as well as differences between the year of the assessment and the sale of a property.

B. Recent Property Sales

Information on twenty-four relatively recent property sales (1984-1985) is summarized in Figure 4-A, Recent Property Sales. This table gives the cost per acre and per square foot calculated on the basis of the entire lot area. The majority of the sales were for developed properties in Framingham, although a few vacant lots were also included.

The range in land cost is from $111,513 per acre ($2.55 per square foot) to $7,851,254 per acre ($180.23 per square foot) with a median of $871,200 per acre. The wide range in costs can be partially attributed to the difficulties of assembling a developable parcel. Very often, developers will pay a premium price for a strategic piece of land which they need to complete their parcel.

The cost per square foot of undeveloped land ranges from $2.55 to $11.91. The high end of this range corresponds to the figure of $12.00 per square foot of unimproved land recently cited by a major local appraiser. This same appraiser offered the figure of $110.00 per square foot for new construction.

C. Potential Land Taking Costs

The following section is being presented in order to give a general idea of the potential land taking costs for widening Route 9. It is not intended to indicate any intent or desirability for widening Route 9. This section is designed to show how the property value figures can be applied to a variety of scenarios for widening Route 9.

The following assumptions will be made for this illustration. The length to be widened will be from Speen Street to Route 126, a distance of 7,920 linear feet along Route 9 (measured on one side only). This length was chosen because it presents a "worst-case" scenario of land taking along an intensively developed segment of Route 9. It is assumed that a strip of land 30 feet wide will need to be acquired. This translates into 5.45 acres of land. It is also assumed that all of this land is on lots that are developed. Using the median value of $20.95 per square foot for developed land in Framingham, the 5.45 acres required would cost approximately $4,973,571.

It is important to keep in mind that these approximate figures do not include any costs for surveying, engineering, appraisals or legal fees, and do not reflect factors such as inflation or higher appraised values arrived at through litigation, where damages in excess of land value alone may be claimed, or the premium value of that part of the lot nearest the highway.

D. Comparison of Sales Prices and Assessed Values

Figure 4-B presents a comparison of the sales price and assessed value for 22 developed and undeveloped lots which were sold between 1984 and 1985. The assessed value is shown as a percentage of the sales price. Based on this sample, it appears that the legally mandated requirement of 100% assessment probably has not yet been achieved. This is true even in the town of Framingham, where property assessments are adjusted annually.

The assessed values were found to be as low as 13.6% of the sales price, although there were variations at the other end ranging as high as 150% with a median of 57.7%.

Recent Property Sales

Town	Status	Cost/Acre Based on Lot Size	Cost/Square Foot Based on Lot Size
F	D	$ 912,582	20.95
F	D	912,582	20.95
F	D	715,690	16.42
F	D	1,363,863	31.30
F	?	1,249,736	28.68
F	D	1,159,131	26.60
F	D	1,075,496	24.68
F	D	495,712	11.37
F	D	1,210,096	27.77
F	D	570,962	13.10
F	V	519,235	11.91
F	?	673,437	15.45
F	V	492,663	11.30
F	D	872,506	20.02
F	D	1,179,604	27.07
N	V	217,917	5.00
N	V	7,851,254	180.23
N	D	871,200	20.00
S	V	111,513	2.55
S	V	189,655	4.35
W	D	529,689	12.15
W	D	321,037	7.36
W	D	934,797	21.45
W	D	2,127,702	48.84

Status: D = Developed
V = Vacant

Median Value - Developed Land: $20.95/sf
Median Value - Vacant Land: $8.15/sf

Figure 5-A

Comparison of Sales Prices
and Assessed Values

	Town	Sales Price	Assessed Value	Difference	Assessed Value as a % of Sales Price
1984 Sales:					
	F	$ 495,000	$ 470,500	$ 24,500	95.0
	F	825,000	1,254,100	-429,100	150.0
	F	450,000	304,200	145,800	67.6
	F	125,000	162,700	-37,700	130.0
	F	830,000	725,000	105,000	87.3*
	F	3,500,000	4,467,700	-967,700	127.0
	F	135,000	96,700	38,300	71.6
	F	170,000	57,900	112,100	34.0
	S	275,000	100,100	174,900	36.4
1985 Sales:					
	F	220,000	127,800	92,200	58.1
	F	1,100,000	630,500	469,500	57.3
	F	850,000	585,500	264,500	68.9
	F	1,823,284	764,800	1,058,484	42.0
	F	176,100	24,100	152,000	13.6
	F	225,000	112,900	112,100	50.1
	F	350,000	144,500	205,500	41.2
	F	110,000	59,600	50,400	54.1
	N	200,000	126,900	73,100	63.4
	W	200,000	152,000	48,000	76.0
	W	135,000	77,900	57,100	57.7
	W	335,000	167,700	167,300	50.0
	W	6,000,120	3,352,700	2,647,420	55.8*

* Median Value

Figure 5-B

VI. ENVIRONMENTAL ASSETS AND OBSTACLES

When considering traffic congestion and mitigation, land use and growth management along Route 9, capital improvements of all sizes are often recommended. These may range in scope from major widenings and reconstructed interchanges to minor improvements, such as traffic channel islands. Regardless of the size of any road upgrading, there are other considerations that exist beyond traffic facilitation alone. Route 9, for all of its massive strip commercial development, still contains segments that need to be preserved.

There are still scenic vistas at points along the highway. There are also numerous water bodies and reservoirs, offering views as well as natural resources. Finally, there are man-made features, such as the attractive stone ramps and embankments that are part of the Route 9 system in Wellesley.

In these areas, structural improvements should intrude as little as possible. Certainly, visual considerations should be a major factor in preparing for any widenings within these segments. Lower impact improvements of the traffic systems management type can be installed, so as to prevent the aesthetically-valuable areas from becoming traffic bottlenecks, but even such improvements should be designed with care.

Other aesthetic problems exist, such as severe visual pollution from commercial signs along the highway. The towns could exert their existing powers to gradually bring about an upgrading of sign quality. There is also visual chaos created by poor physical separation between properties, the road and the lot lines.

The following narrative does not attempt to promulgate detailed preservation and visual upgrading policies. It is, by contrast, a free-form discussion of the problem. It also provides a brief historic perspective on Route 9.

A. Historic Perspective

Present day Route 9 originally was created in the early 1800s as a turnpike between Boston and Worcester. For approximately thirty years, in the early part of the twentieth century, the Boston and Worcester Street Railway Company operated electric trolleys on the 49-mile stretch between the cities. Travel time on this heavily used public transit system took approximately 110 minutes one way.

Even though the turnpike provided the most direct route between the state's two largest cities, it was not the road used by most travelers between the centers; instead Route 20 filled this role. The state was reluctant to develop Route 9 as an express automobile highway because it had so many steep grades along its path. By the late 1920s, however, as the number of cars in the state continued to increase rapidly, the Massachusetts DPW decided to move ahead with plans to build a modern highway to replace the existing route and eliminate the trolley right-of-way.

Since the 1930s, the road improvements have continued, and massive development has accompanied these improvements. It is ironic that the hills that once made the State reluctant to improve Route 9 still remain and, in fact, provide many of the aesthetic qualities that this chapter will review.

Although the highway has become one of the major commercial strips in the metropolitan area, many natural features still remain along the road. Large ponds, lakes and reservoirs are located in all of the towns. As a matter of fact, the Route 9 Corridor contains valuable water resources. Water pumping stations can be viewed at various points from the highway in each of the towns.

Further, even though most of the early fields and forests have been given over to development, sizeable woodland parcels command frontage positions along the highway. Most of the water bodies and some of the woodlands are protected from development by public ownership.

The scenic variety provided by the lakes and wooded areas offers welcome relief to travelers on what has otherwise become a densely developed highway. In addition to providing visual relief, these more scenic locations provide drivers with a respite from vehicles constantly entering and leaving the roadway which necessitate changes in speed and lanes.

Throughout the Route 9 Corridor there is a tension between the need to improve the physical capacity to carry more traffic and the desire to preserve the aesthetic quality. Despite 640 curb cuts, 130 intersections, and 17 access ramps within 17.5 miles, there are many locations that are still of high visual quality. Across from Mass Bay Community College, for instance, trees and shrubbery along a frontage road shield homes from both the visual and noise disruptions that occur near heavily travelled roadways. In areas such as these it is important to preserve such buffers not only for aesthetic reasons, but for safety.

The four communities in this study have reacted to the improvements and development in very different ways. For this reason the visual environment changes as one drives through the various towns. The next section describes each community's response to development and change along Route 9.

B. Patterns of Growth Along Route 9

Forty years ago Route 9 was largely a residential and rural road, (suburban in the eastern section, rural in the western). After World War II, Shoppers' World was constructed in Framingham and a major metamorphosis began. Local planning decisions, or the lack thereof, contributed to the changing character of the four towns studied.

Wellesley, firmly committed to residential development early on, zoned much of its land along the road in such a way that it protected and enhanced existing development. Even with the major increases in traffic on the road, new housing construction along the road continues. The variety of architecture testifies to the fact that housing development has been an ongoing process on this strip. A Route 9 address in Wellesley is still considered a fashionable one. People are willing to pay high prices for the privilege of a home here. Assessed values reflect

this. For example, one single-family Route 9 home is currently assessed at over $400,000. Fewer than a handful of residential properties adjacent to the road have assessed values of less than $100,000.

While Wellesley has maintained its desirability over time, Natick's and Framingham's stretch of highway has become largely a commercial strip. "The cycle of conversion" can be seen as one drives along the road. Initially, individual houses are used as residences. The next step in the cycle is the incorporation of small businesses within the existing structure. This is then followed by business and building (and commercial sign) expansion. At the final stage in the cycle, buildings are demolished and new larger commercial buildings replace them.

Framingham has basically moved beyond the first stage of this cycle. There are, however, many businesses still located in houses that have been converted to, and expanded for, commercial use. Demolition and new construction is common, as large masonry buildings replace smaller, wooden structures.

Natick and Southborough are still experiencing the entire conversion cycle phenomenon. To some extent, however, Southborough, which is just now entering its major growth phase, is likely to skip the intermediate steps and go directly from single houses to first class office construction. As has been noted previously, Wellesley is not involved to any major degree in this process. Some upgrading of commercial structures is occurring in the business zones, but since these comprise only a small percentage of the town's 5+ miles of highway, the effects are not very noticeable.

For the most part, the depth of the commercial zone along Route 9 is fairly limited. There are a number of areas, particularly in Framingham and Natick, where the zone is deep enough to allow for commercial development beyond the existing Route 9 frontage. In these adjacent areas, the houses are being converted to offices and former lawns are being paved over to provide parking for tenants and customers. These businesses, although not counted in the present study, are also generating additional traffic which funnels primarily onto Route 9.

C. Local Public Influences

Only recently have Natick and Framingham enacted legislation to give them greater control over the details of growth occurring within them. During the past two years, they have adopted site plan review provisions in their zoning bylaws. (Wellesley and Southborough have had such controls for considerably longer periods.) This ability to specify the quality of site work has contributed, at least in part, to increasingly attractive development. More attention and concern has been focused on the design of parking lots, driveway entrances, buffer zone plantings and other amenities of these types. The results are encouraging, particularly from an aesthetic perspective.

One area that still needs attention - most particularly in Framingham - is the degree of visual clutter created by the profusion of business signs - most of which are very near the roadway's edge. The distracting impact of these signs on motorists should be evaluated. Local business owners continue to invest sizeable sums to 'improve' and expand their signs (many of which cost thousands of dollars) to attract the attention of the public

to their location. Any challenge to this aspect of business advertising is likely to meet with firm resistance. A comprehensive study of the effectiveness of signs and their role as identifiers should be incorporated into future plans for the road. Another problem, not limited to Route 9 but certainly acute there, is the lack of visible street numbers on many buildings. The inability to locate one's position on the road easily is a hazard for all of those who use the road.

The level of development situated so closely to the existing roadway leads to many obstacles when considering capital improvements along Route 9 to improve traffic flow. This is especially true when these man-made obstacles combine with environmental and aesthetic concerns. The following section outlines these obstacles and discusses some of the municipal responses to them.

D. The Obstacles

One of the major obstacles to any future widening of Route 9 has already been alluded to - the number and value of properties along the highway. Setbacks in some of the sections of older development are minimal - in some cases in Wellesley, Framingham and Natick, structures are within 20 feet of the present road. Signs are often much closer.

In addition to the difficulties that will be encountered by the existence of many buildings near the roadway, environmental conditions will also add costly challenges.

Through much of Wellesley land on the sides of the road slopes steeply away from the street. In many cases - particularly in the Wellesley Hills area - these slopes are maintained by attractive stone retaining walls. Where land is more level, structures exist closer to the highway. Road width is also confined by over a dozen over- and underpasses.

Wetland areas are a concern. All the towns have water storage sites at various points along the road. Construction has not always respected the importance of these areas. A picture of the parking lot of a fast food operation in Natick shows permanent standing water right up to the asphalt. Wellesley and Southborough appear from an analysis of the MacConnell Land Use Maps of 1980 to have land that is most environmentally sensitive along the road.

For traffic planners the numbers of curb cuts along the highway is a matter of concern. Route 9 with its 644 curb cuts offers a real challenge to anyone who would like to standardize site access. Many of the curb cuts are well defined with good directional signs that aid drivers to enter and leave the property in a safe and efficient way. Most all new construction is designed to optimize driver convenience in this way.

Unfortunately such is not the case in many locations. Numerous road repavings over the years have built up the surface to the level of the old curbs, thus creating large access points across the entire front of many properties. Several dozen businesses in Natick and Framingham, where these conditions exist, also provide unmarked parking space in the front of their establishments. Drivers are left to pull in and out of the parking lot without the benefit of adequate guidelines to help them make consistent and safe decisions.

One business helped eliminate the confusion caused by these conditions by painting a solid line where the curb should have been and also striping the lot to maximize its use for parking. The painted line, although not a physical barrier like a curb, did act to cut down on the random crossings made by drivers before it was in place. A similar approach by the other businesses might help regulate highway exits and entrances until such time as new curbing is ready to be installed. Unfortunately these kinds of uncoordinated improvements, while constructive from a safety viewpoint, do not necessarily improve the visual quality of the Route 9 Corridor.

In the densely developed areas along Route 9, pedestrians frequently use the sidewalks. These pedestrians might also be the beneficiaries of corrective measures mentioned above. The confusion caused by cars parked on what should be the sidewalk often forces walkers to move closer to the street than they should. Again, along Route 9 there is a continual compromise between safety and aesthetic values.

The next section outlines some of the more important scenic areas that should be preserved.

E. Areas of Scenic Value

Route 9 for all its problems offers travelers many beautiful vistas as they drive along its length. Many arguments can be made for the preservation of existing natural features.

Southborough still has much undisturbed land that should be husbanded in ways that will retain its beauty. Many of the new developments along the road there are set back a good distance from the highway and offer the passing motorist sweeping views of natural grass and foliage. The NYNEX property is a good example of open space and wetland preservation by a developer.

Reservoirs create much of the visual pleasure that exists in Framingham. So too, does the green median strip located near the Mass Pike and Route 30 interchanges. These visual breaks in the otherwise crowded road provide welcome contrast for motorists.

Large, old trees, which cast pleasant shadows on summer days, have been allowed to remain at the very edge of the road in several places in Natick. Their removal would destroy a very important natural amenity and be a high price to pay for widening the road.

However, it is in Wellesley that trees offer the best barriers between highway and adjacent land use. Years of growth have produced greenery that provides privacy for many of the dwellings that exist close to existing sidewalks.

One of the loveliest stretches along the entire road is owned by Mass. Bay Community College on the south side of the highway before the entrance to Wellesley Hills. On the opposite side of the road from the college campus, a frontage road offers an almost rural-like buffer for the homes that are situated along it.

In places where rapid change is happening, consideration must be given to preserving that which enhances the area and gives a sense of identity and continuity. Route 9 has many unique features that do this.

VII. GROWTH MANAGEMENT TECHNIQUES: AREAS FOR FURTHER EXPLORATION

A. Purpose and Background

When commercial and industrial growth occur within a highway corridor, an ever-increasing quantity of traffic is generated. This is one of the prices that a community pays for prosperity.

In some locations, however, traffic may be approaching failure at the intersection or interchange, perhaps for 5 or 6 hours per day and up to 4 or 5 days per week. When, at such locations, there is little likelihood that the intersection or interchange can or will be significantly improved, then there is little choice in the long run but to consider some modifications to abutting land use. Wholesale down zonings on developed properties are unrealistic, but judicious use of various growth management techniques can represent a significant compromise in limiting future traffic by means of controlling land use.

In this chapter, various techniques of potential applicability are briefly described, for consideration by municipal decision-makers, MetroWest Committee representatives, legislators and other interested parties. This list is by no means a complete one; other tools could be considered as well. The ones outlined in this section are simply those that seemed, at this early stage, to be of highest potential applicability on Route 9, as evaluated by the preparers of this study.

The presentation, as will be apparent, is a generic one. Explicit and site-specific growth management recommendations are premature at this point. The objective is simply to acquaint local and regional officials with the possibilities for growth management, and then to stimulate future discussion. These dialogues may occur within individual towns, at the MetroWest Growth Management Committee, among legislators, or in other interested organizations both public and private. For the moment, the stimulus to that debate is the sole purpose of this chapter. Any future phases of a Route 9 Corridor Study presumably would delve into greater detail as to the application of growth management tools; considerable research will need to be done on this subject. At this time, however, a generic presentation satisfies the purposes of the preliminary study.

The following is a list of techniques that are briefly described in this section:

- - - Traffic or Transportation Impact Fees
- - - Limited De-Intensification of Zoning
- - - Development Scheduling
- - - Transfer of Development Rights
- - - Parking Area Increases
- - - Developments of Regional Impact
- - - Regional Traffic Mitigation
- - - Site Plan Review

B. Traffic or Transportation Impact Fees

Generally, development impact fees have stood up well in courts in various states, provided that they have a rational, documented basis. The required capital improvements must be demonstrated to be necessary for the public good, preferably in the form of a topical study, a comprehensive plan, capital budget, or other laws and regulations. In addition, any pro-rated share of the total capital cost that is levied on a given developer must be shown to be reasonable and accurate. There must also be confirmation that the impact fee is, in fact, used for the improvement for which it is imposed.

By extension, it would seem quite probable that the process could be applied to traffic or transportation impact fees. If correlated with Route 9 traffic data, and with the land use data from this study, formulas can be established for levying fees based upon estimated traffic generation. The process of setting traffic generation figures will require careful thought. Standard Institute of Transportation Engineers coefficients can be applied without a great deal of sophistication. The problem, however, is that in some developments there are mitigating circumstances which place the project somewhat outside of the norm in terms of traffic generation. For example, the ready availability or total absence of good public transportation could vary actual traffic generation significantly.

In a community with a qualified professional person, such adjustments to the formula would not be difficult to make on a reasonable basis. In smaller towns, however, some lay boards might find the process to be somewhat elusive at first. If so, it may be possible to codify in advance different traffic situations. Establishing traffic figures for the impact fees is not, in any event, an insurmountable difficulty, as demonstrated by Framingham's recent traffic impact bylaw.

When the traffic generation has been estimated or forecast and the fee established, there are then two ways in which to proceed with policies. The first would be to designate all Route 9 traffic impact fees to be used specifically for the purpose of Route 9 highway improvements which, in part, are required due to the development in question. With Route 9 being a state highway, the Massachusetts Department of Public Works would clearly have to play a major role in such a process, in cooperation with the municipal regulation. Certainly the legal issues and administrative procedures involved (in having MDPW administer a programmed highway improvement fund on behalf of a town) would have to be resolved, but the process would generally appear to be feasible.

The other major course of action would be to place the impact fees in a fund for alternative transportation programs or related actions to mitigate traffic. The town would administer the fund, based upon having a cooperative plan with local businesses and industries within the Route 9 corridor. The program also could be administered on an inter-town or regional basis in all or part of the Route 9 corridor.

Since this strategy is a departure from requiring long-term, fixed capital improvements, it might be comparable to a "linkage" program, of the type that Boston has for housing and neighborhood improvements.

C. Limited De-intensification in Selected Locations

The idea of using basic zoning powers to simply lessen development is tempting in its simplicity. Reduce allowable floor area, floor area ratio or other requirements and you will decrease further traffic generation, thus avoiding a worsening of the traffic situation. The actual possibilities for employing this technique, are not, however, quite that simple to implement.

Allowing, for example, 20,000 instead of 100,000 square feet of business expansion, or downzoning from commercial to residential uses, might constitute an uncompensated taking in the minds of some people. Litigation would be a virtual certainty in such cases, and a wholesale downzoning for an entire district would compound the problem enormously. On the other hand, reducing the permitted business expansion from 100,000 to 60,000 square feet, based directly upon a demonstrable decline in traffic Level of Service at a given interchange or intersection, might be more reasonable.

There are nearly infinite ways in which a formula can be worked out for the purpose of linking permitted land development to traffic generation. The point is that the formula should be based upon supportable data and should be uniformly applied to developments within the affected area.

It is necessary to designate the affected area by establishing and mapping the actual districts within which the de-intensification regulations would apply. There might be interchanges or intersections where traffic service is already failing, approaching that level for several hours a day, and where there exists either considerable development pressure or particularly high potential growth. In these most extreme cases, there must also be consideration of any major capital improvements planned for the coming years which will help to relieve traffic flow and safety at or near the location. If no such improvements are programmed, then there will be little choice but to attempt to institute growth control measures which limit the intensity of land use.

The particular zoning format also should be mentioned in establishing this kind of a regulatory mechanism. Perhaps the least arbitrary and most supportable method would be to designate these special zones as Overlay Districts. They could be handled by special permit within existing districts, but since these special zones do possess explicit, mapped boundaries, the overlay mechanism might be more appropriate.

In any event, any decisions to de-intensify, even on this relatively limited basis, will be difficult and controversial ones for a town. In some instances, however, the town might have little choice, if it wants to avoid a much worse situation in the future.

It should also be noted that either impact fees or de-intensifications could, in theory, be administered on a corridor-wide or regional basis, recognizing such constraints as the controversy of the proposal, the need for special legislation and other factors.

D. Development Scheduling

The idea of phasing development over a gradual build-out period is one that has been gaining in popularity and in judicial acceptance over the years. If based upon a demonstrable rationale, such as inadequate infrastructure or excessive public services burden, and if uniformly administered on an equitable basis, then it can be a useful growth management tool. It helps a community to avoid the circumstance where too much development occurs within a relatively short time period, by spreading out the growth over a longer time period. It also makes development more predictable over time for both the town and the private sector.

Development scheduling can work in various ways. It can establish an annual portion of growth allowed by square footage, number of buildings, number of units, or whatever method makes sense. Each development, in most cases, is allowed its annual share of building. Some projects will be too small to be segmented and must be constructed in their entirety or not at all. For this reason, some small exemption threshold might be considered, although it should not be allowed to serve as a widespread loophole in the regulation.

The question of whether or not commercial development scheduling might be of benefit in the Route 9 corridor is a difficult one. Many in the business community might argue that it would be economically punitive. Various parties might feel that it is inappropriate for Route 9, which is so complex a "unit" of land use and thus proportionately more difficult to administer equitably. Nevertheless, development scheduling is worth considering as a means of lessening immediate development pressure. For some communities it is a better, although more complex, alternative to a moratorium.

E. Commercial Transfer of Development Rights in Route 9 Corridor

Broken down to its most basic level, transfer of development rights provides a community with a regulatory tool for shifting the right to build away from a spot where it is not desired, to one where the construction is more acceptable. Town officials might be saying, in effect, ".... move your proposed office building or housing subdivision or row of stores from this area, where traffic problems are already severe (or where there is no sewer and water), to this other part of town, which is more able to accommodate the development."

The TDR concept has been around for at least fifteen years,but has not been extensively utilized due to a variety of practical difficulties. It works best when there are nearby sites that are largely vacant and available on the market. Such convenient circumstances do not often exist on Route 9.

In theory, a transfer of development rights program would help to locate new commercial development in areas most able to accommodate traffic increases. Route 9 locations that are already approaching traffic failure would be severely limited in their ability to expand.

These would be the low growth zones. For example, such expansions might be limited to 10 percent of total floor area with a maximum cap of 50,000 square feet per land parcel in existence at the time the bylaw is passed, provided that this expansion conforms to all pertinent regulations. These kinds of growth limitation clearly would dramatically decrease the rate of return most land owners expected from their property at the time they purchased it.

In order to compensate for the decreased market value in the low growth areas, affected land owners would be given development rights elsewhere that could be substituted for their lost development potential. These development rights would be transferable to areas suited to additional development; these locations would be the high growth zones. The development right owner could purchase property in one of these high development areas in order to use these rights, or he could sell them to another developer who wishes or is able to build in that particular area.

There are many caveats when applying this concept to a highly developed area with a massive potential for additional development, such as the Route 9 corridor. First, it is difficult to determine how the value of a single unit of a development right should be calculated. It is generally determined by lot size or building size potential, but this is a difficult process on Route 9. Second, it might well be that the most problem-ridden lengths of Route 9 simply constitute too short a segment to benefit from TDR. For example, the ultimate growth at an interchange or intersection where high development is permitted, might end up backing vehicles into the low growth area anyway. The intriguing alternative would seem to be to transfer development to zones along other major roads. Doing so on an equitable market value basis, however, could be of immense difficulty. An improved acre on a secondary road is simply not as valuable as a like property on Route 9.

If a transfer of development rights program is to be equitable and economically justified, these questions must be resolved.

F. Growth Control Through Increased Parking Ratios and Dimensional Requirements

The development potential of a commercial lot is constrained by site design requirements, such as the depths of setbacks and yards, minimum open space size, and parking requirements based on the intensity of the land use. Increases in any of these regulations, without lowering one of the others, will have the effect of decreasing a lot's development potential. Parking has easily the greatest potential impact on development intensity along Route 9, when compared to other dimensional regulations.

Within the Route 9 corridor, it might be logical (where parking is not adequate) to increase the minimum parking requirements. Doing so will reduce the maximum building potential, thereby lessening the intensity of traffic congestion.

Three factors must be carefully considered when evaluating this technique. The increase in parking must not be accompanied by a decrease in required on-lot open space. The intent is to reduce

permitted building size, not the open areas. Second, the regulations governing parking structures should be reviewed. If high-density garages or built-in parking floors are allowed as accessory uses, then the growth-limiting effect of the increased parking requirement would be reduced proportionally. Third, and perhaps most important, is the fact that parking increases cannot be arbitrarily and drastically high. If the new required ratios deviate excessively from existing commercial standards, existing zoning bylaw requirements and/or actual demand along Route 9, then they will not stand up to judicial review.

It is also possible to limit development intensity by increasing dimensional requirements such as lot coverage, setbacks and yards, and other items. Perhaps the major weakness here is that many of these items on a case-by-case basis would be vulnerable to zoning relief by means of the appeals process.

G. Developments of Regional Impact

Large developments located in one community always generate some negative impacts on abutting towns. These impacts might involve traffic, environmental effects, and burdens on infrastructure or public services. In a governmental system in which the municipality is the fundamental unit of land regulation, this dilemma usually remains an unresolved one. Many bitter inter-town disputes have occurred in these cases, yet there is no formal mechanism for addressing the problem.

There is strong precedent in Massachusetts for an inter-town regulation of developments of regional impact. Back in 1974, a special act of the legislature created the Martha's Vineyard (Land and Water) Commission, which has unique powers in regulating developments of regional impact in the six island towns, as well as in environmentally fragile areas. Reconstituted in 1977 under Chapter 831, the Commission has had a history of mixed success, with two of the larger towns withdrawing and then resuming membership (they are currently active once again). Despite the varying record, the Commission does establish a strong precedent for multi-town review.

There have been occasional efforts over the years to extend the idea to the rest of the state. The most recent was the bill introduced in 1984 and 1985 by Senator Carol Amick, (D-Bedford), which did not emerge from committee but does appear to have a solid core of support. Other states have passed regional development impact legislation during the past twenty years. These range from Florida's Act 380 to the Hawaii Land Classification Act, which amounts to state zoning. Vermont, Maine, Oregon and California also have special acts in widely differing forms.

It can be argued that much of the country does not need such legislation, because, unlike in New England, the county is often relatively large in geographic area and is the predominant unit of local government. This automatically builds in a degree of regionalism in land use regulation. Whether or not this is the case, the fact remains that some DRI powers could be of benefit within the Route 9 corridor.

The process could be created statewide, regionally, or even just along Route 9. The implementing bodies could be the existing regional planning agencies, other special districts or any combination thereof. Counties in Eastern Massachusetts do not constitute functionally or geographically a reasonable regulatory unit. Regardless of the approach that is used, the development conflicts between towns (both de facto and de jure) are almost always regional in nature.

The existence of the formal inter-town entity - the MetroWest Growth Management Committee - which includes selectmen and planning board members, offers an excellent foundation on which any future review and regulation of major developments of regionwide significance can be based.

For any DRI system, the definitions of what makes a project fall within this level of review must be carefully thought out to fit the towns and region in question; criteria must not be borrowed too liberally from different locations. Most places establish a list of eligibility criteria and quantitative thresholds, any one of which could require a DRI designation. Among these items are the following: lot area; building(s) floor area; floor area ratio; parking quantity; quantity of units or lots; certain land uses or location in a fragile area; traffic generation; and other criteria. Hawaii uses a carrying capacity approach, which seeks to measure burdens upon infrastructure, public services and the environment. Carrying capacity is, however, a sophisticated and data-intensive method, which should not be lightly employed.

The central point is to make the list as locally-oriented and as functional as possible.

H. Regional Traffic Reduction and Alternate Transportation

There are numerous ways to help in reducing traffic volumes and peak hour failures, employing "soft" techniques such as the following: car- and van-pooling, private shuttle buses from public transportation terminals or from off-site parking lots, private or local public bus lines, staggered shift hours, private company contributions to traffic control, or other methods of alternate transportation.

Perhaps the best means of placing some real strength into such a program would be to create some sort of regional traffic management district, probably with special assessment powers. Annual fees would be levied on private businesses, with firms paying more for each person driving to work alone. This special district could also monitor traffic at key interchanges and intersections on an ongoing basis, and even pin-point specific sources of traffic generation. Programmed Massachusetts DPW capital improvements in the Route 9 corridor also could be monitored and considered in all planning efforts.

Attempting to implement traffic mitigation measures on a town-by-town basis could be a self-defeating proposition. The communities must work together on this problem. Special enabling legislation probably would be required, but the end results might well be worth the effort.

I. Site Plan Review

Site Plan Review is not really a growth management tool in that it does nothing to moderate the rate of growth, unlike the techniques previously discussed in this section. It is often included, however, in comprehensive packages of growth management regulations, because it serves as an ancillary technique to the ones that do moderate the pace or intensity of development.

In practice, SPR varies a great deal in its purview, administrative structure and zeal of application. An objective, universal description, however, might be as follows:
SPR is the regulatory process in a municipality wherein development plans are reviewed in terms of landscaping, overall layout, adequate provision of on-lot utilities, location of curb cuts on-lot, parking layout, internal circulation, drainage, perimeter screening, and similar considerations. To the degree that SPR is effective and enforced, it can enhance the quality of a development, can have some impact upon safety aspects, and may help prevent or modify bad developments which would otherwise have serious adverse impact on the area.

The four towns in the Route 9 Corridor Study now all have site plan review, but with differing levels of comprehensiveness and specificity.

VIII. CONCLUDING OBSERVATIONS

The traffic congestion and safety problems on Route 9 represent a huge and multifaceted problem, encompassing vehicular traffic, highway improvements, para-transit, multi-modal public transportation and land use and growth management. Decision-making occurs, and must continue to take place, at every level from local to federal. It must also occur within the private sector, among the myriad of business interests. Planning and problem solving for Route 9 must reflect this extreme complexity and interdependence. Every component in the Route 9 system profoundly affects, and is affected by, every other component.

For the preceding reasons, it is apparent that the problems of this corridor must be addressed comprehensively. There are no one or two solutions and strategies that will make substantial inroads into the morass that is Route 9. Rather, the use of numerous approaches is necessary to achieve any major benefit.

A comprehensive approach to solving the problems of Route 9 will need to look first at the causes of the problem, not just at the symptoms. Since one of the causes is rapid development, growth management will need to be considered to deal with the root of the problem. This approach will help ensure that other measures including, but not limited to, signalization, intersection improvements, road widening and mass transit, can be designed to handle the desired future level of corridor development and traffic generation. If growth management is ignored, the components of any solution to the Route 9 traffic problem are likely to break down under the burden of future traffic generation resulting from uncontrolled growth.

Because the impacts of land-use decisions reach beyond geographic and jurisdictional boundaries, the various decision-makers must work together in a coordinated manner. This fact has been recognized by local officials, area businesses and civic groups in the Route 9 area and resulted in the formation of the MetroWest Growth Management Committee over two (2) years ago. This Committee is composed of representatives from the Boards of Selectmen and Planning Boards and meets monthly to discuss issues of common concern and regional impact.

This report is meant to provide all interested local officials, businesses and transportation related agencies with an introduction to the magnitude of the problem primarily from a land-use perspective. It is also designed to provide basic information on the growth management techniques which may form part of the solution.

Future phases of the Route 9 Corridor Study will explore comprehensive strategies in greater detail, often with explicit recommendations and site-specificity.